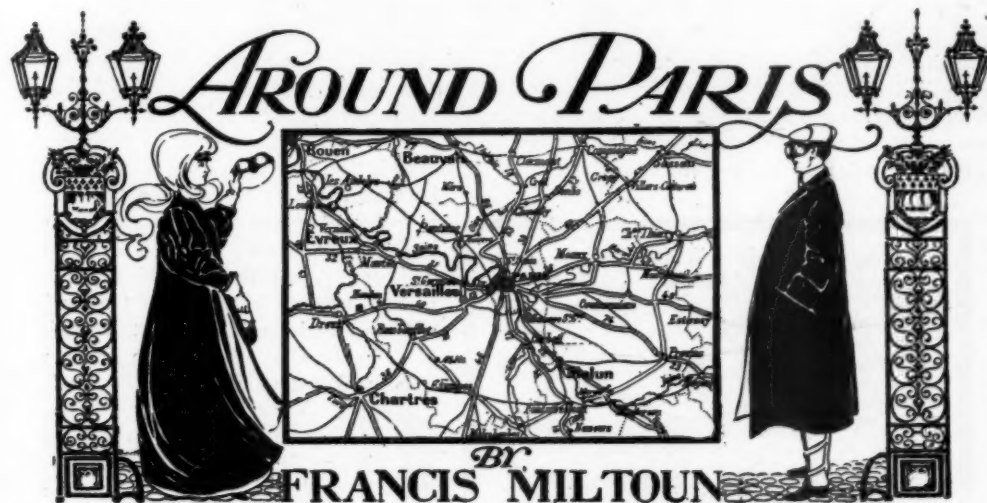


THE AUTOMOBILE



IN the first place, the touring automobilist has no reason whatever for taking his automobile into Paris. It's the most dangerous place for the stranger automobilist to navigate that exists on earth, and if the women folk want to "shop" or drive in the Bois just hire a taximeter—it's cheaper, more convenient, and the responsibility in case of accident is on some one else's shoulders. You may even hire an "auto-taxi" with a chauffeur instead of a chauffeur, and that will have the element of novelty to it worth paying for.

Probably few foreigners, and perhaps not many Parisians, know the delights and charms of all the cities and towns, and the neighboring countryside, within say a radius of fifty miles from the Place de la Concorde. Within this charmed circle there is a wealth of shrines at which one may worship, and uncounted kilometers of crossing and recrossing historic highways, which most stranger automobilists would like to make acquaintance with if the way were only pointed out. There is, to be sure, a stretch of roadway now and then, even outside what may be called suburban Paris, which is distinctly bad, because of the awful *pavé*. There is such a stretch through St. Germain-en-Laye, another at St. Denis—en route to Chantilly and Compiègne and at Villeneuve-St. Georges—going out to Fontainebleau; and very bad samples of roadway they are.

A Charming Circle 500 Kilometers Round Paris.

A great circle drawn around the "ville lumière," with a circumference of five hundred kilometers, more or less—and often not out of sight of the Tour Eiffel or the Sacré Cœur—will give two or three days (or better a week) of as enjoyable sightseeing touring as can be had in a straightaway run across the better part of France to Aix-les-Bains or Vichy.

The following outline is only an approximate possible itinerary, and if it is not desired to cover the entire ground portions of it can be combined with the Normandy tour, or taken en route from Paris to Switzerland, to the Rhine, or down into Touraine. It will be time well spent for those who have hitherto thought they already knew France well, and considerable newer ground will

be turned over than that to be found in many regions more remote.

Since the touring automobilist coming from abroad, whether he be American or English, usually arrives via Havre or Dieppe, and via the valley of the Seine, he ultimately comes to St. Germain just before entering Paris—this point has been taken as the commencement of the itinerary. If one actually is in Paris he can go out by any of the *portes*, or gates, as marked on the accompanying sketch map, and take up with the itinerary where he will at any point along its periphery; interest is pretty equally divided.

There are very good reasons for entering France with one's automobile via Havre; there are better facilities for unshipping it than elsewhere; there is a garage proprietor there (Burton) who especially concerns himself with getting you "started right," and will even arrange the preliminaries of your "Certificat de Capacité" and "Recepié de Déclaration"—if you advise him beforehand—and may perhaps be able to save you twenty-four or forty-eight hours hanging around Havre or Rouen trying to accomplish the thing yourself, with only the vaguest notions as to how to go about it. Once one has finally got free of those "formalities" and his port of entry—of which particulars have many times been given in THE AUTOMOBILE—one reaches St. Germain via the great Route Nationale, familiarly known as the "Route de Quarante Sous," because—supposedly—some poor *chemineau* tried once to cover it from Rouen to Paris on less than half a dollar.

The *pavé* of cobble stones through the main streets of St. Germain is about as bad as you will find. There is good garage accommodation at the Hotel du Pavillon Louis XIV., and the eating and sleeping arrangements are equally good and expensive, the hotel being appointed by the Automobile Club de France



and three-starred in the "Guide Michelin." Still this is the place to stop whilst "doing" St. Germain, its Chateau Neuf of Henri Quatre, the remarkable birdseye view from the Terrasse built by Le Notre in 1672, and the great alleys of the Fôret. It is all hallowed and historic ground, and the guide books will enumerate the "sights" more fully.

To Reach Versailles and Avoid the Villainous Pavé.

From St. Germain to Versailles is only twelve kilometers, descending to the level of the Seine and then climbing up again through Marley. The awful *pavé* now disappears, in part, but what there is left is bad enough; it can be entirely avoided by leaving St. Germain by the route through the Fôret de Marley, and entering Versailles by the back door, as it were, and the distance is not perceptibly greater.

Versailles and its chateau and its gardens, its fountain, its Trianons and all its other sepulchral charms, called mistakenly the glory of France, is the beau ideal of the tourist's chateau, albeit it is a theatric, unreal ensemble and has not a whit of the artistic value of many others less well known. For the sightseer Versailles is worth half a day, however; it can hardly be done in less. That makes, with St. Germain, practically a day already, but one can readily enough get on to Rambouillet, another thirty kilometers, for the night and avoid much that will be objectionable in the hotels of Versailles, luxurious though they be. Versailles is fast becoming an American residential suburb for Paris; perhaps this is the reason prices are so elevated.

The road to Rambouillet from Versailles via Trappe through the Fôret de Rambouillet, where were held the royal hunts of other and more picturesque days. Here, too, are still held "Les chasses Nationales," when visiting royalties are invited to go out and kill something by the present figurehead of republican France. The road is a delightful one through its whole length, and in the forest itself it runs through great alleys of pines in a most romantic and truly delightful fashion.

As one comes up with Rambouillet, the town, there is more cobble stone *pavé*, and particularly vile it is. Either the Croix Blanche or the Lion d'Or are good enough hotels, at any time except between Friday and Monday, when they are apt to be filled with week-end trippers out from Paris. The attractions of Rambouillet are its chateau, which since the very earliest times has ever been a royal hunting lodge. François Premier died here, and in Napoleonic days it was a retreat for many of the followers of the little corporal, and he himself—at the end of his first day's journey when going to his exile—slept within its walls. Here, too, at the end of monarchical times under the restoration, Charles X. signed his abdication.

Historic Interest, Good Roads and No Speed-Traps.

Straight on from Rambouillet the route nationale leads to Maintenon and Chartres, but circling Paris one takes the second class road to Etampes, via Ablis, in all forty-three kilometers. It is a second-class road, but does not look it, and, being a byroad, one can let his automobile out for all it is worth, for there is little or no traffic to stop one, and the gendarmes hereabouts are lenient.

Etampes dates from the year 604, and accordingly has a respectable old age to its credit and a history quite as worthy. Various councils of the church were held here when the church practically ruled the state, and the Roi Robert of the second race of kings built a palace here known as the Palais de Quatre Tours,

and François Premier, by making the celebrated Anne de Pis-seleu the Duchesse d'Etampes, did much more for its popular fame. Etampes has left to-day the Tour Guinette, a part of the chateau which existed before the twelfth century, with the churches of St. Giles and St. Martin dating from the same period, but with later Renaissance interpolations, and another church, that of Saint Basil, which owes its foundation to King Robert in the tenth century. Etampes really, take it all in all, is worth seeing, and the Hotel du Grand Monarque is not bad, either; nine francs a day, not more, all found, and the proprietor has been heedful of some recent advice given by the paternal Touring Club de France, with a desirable result with respect to matters sanitary in his grandiloquently-named establishment.

From Etampes to Malesherbes is a run of twenty-six kilometers through the heart of the Gatinais, a region as forest grown and as sylvan as the Adirondacks, but not so grand. It is the most thickly wooded of any of the *petits pays* of France bordering upon the Ile de France, a land of pleasant valleys and rolling hills, and all green or gold, according to the season of the year. The chief product of the Gatinais, and in great repute in the mar-

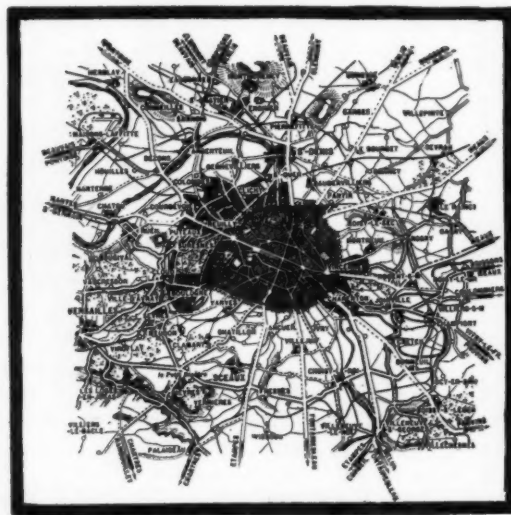
kets of Paris, is honey; not the perfumed kind served up for breakfast in the average six-francs-a-day pension in Switzerland, but the real thing, made by bees, and not fabricated by the hand of man. Malesherbes has a thirteenth century church and a chateau which contains some good furniture of the days of the Louis, and some Gobelin tapestries. There is also the Chateau de Rouville in the suburbs. The town is worth an hour or two, and then the road runs direct—this time a route nationale again—straight through the heart of the Fôret de Fontainebleau, the grandest, perhaps, and certainly the most celebrated, forest in the annals of history and art. Fontainebleau's attractions are many and for all men, and to none more than to automobilists, for the uncounted kilometers of well-kept forest roadway

have a great charm and novelty for one who has driven his capable automobile over hundreds, perhaps thousands, of scrubby roads bordered only by snake rail fences or a railway track. They do things differently in France, verily! Strike right through the forest and enter the ville by the Grande Rue, past the palace gates, and put up at the Candran Bleu for *déjeuner*.

After the Palace, the Forest Retreat of Artists.

As a sight Fontainebleau's palace, the outgrowth of Louis VII *rendezvous de chasse* of the twelfth century, is quite worth the greater part of the afternoon, when there will still be daylight enough left to make the "Grande Ronde" in the forest, including a detour to take in that little artists' village of other days—Barbizon. Have your *apéritif* here at the "Charmettes"—or tea if you affect that sort of thing—look through the closed gates into the gardens of the houses once occupied by Corot, Millet, Diaz and Bayré, buy souvenir picture post cards to your fill (which you will forget to post till you are hundreds of kilometers from Barbizon) and then take the road again across the forest, twenty kilometers southeast, to Moret-sur-Loing. This is an ancient little town, with two fortifying gateways at either end of its main street, situated just over the further edge of the forest. It is an artists' sketching ground as famous to-day as was Barbizon in the past.

"Les Violettes"—not a hotel, a pension or a boarding house—will care for you marvelously for six francs a day, and you will think you never met with anything quite so good for the price,



FORTY MILES ROUNDABOUT PARIS.

nor anything quite so dainty and picturesque as Moret itself, with its gates and towers, its donjon, its church and its flour mills built out over the river in real stage carpenter's fashion. It is astonishing how unreal the real thing can be sometimes! Truly Moret is a paradise for artists!

The next morning, following up the road by the Seine, just over the ridge back of Moret, you will have a delightful fifty kilometers to Provins, via Bray. Provins is one of the most appealingly historic small towns of France (once its population was 60,000, tenth century; to-day it is 8,000). It has a round half dozen architectural monuments which rank supreme in their respective classes, from the famous Tour de Caesar and the city walls to the Renaissance Eglise Ste. Croix. The Hotel Boul d'Or at Provins is bound to keep one for lunch; time will pass quickly in this old mediaeval town; and anyway you might do worse, though there will be no ham and eggs or grilled kidneys on the menu. One doesn't come to France for such gastronomical trifles.

Where France Makes Cheese and Automobile Records.

From Provins to Chateau-Thierry, in the valley of the Marne, is sixty odd kilometers, via la Ferté-Gaucher, with nothing much to detain one en route except the wonderfully diversified landscape through which one passes. This is the Pays de Brie, and is as famous for its cheeses as is the Gatinais for its honey. It is a fact that the only *real* Brie cheese comes from hereabouts; all others are rank imitations and decidedly not so good, either in taste or quality.

At Chateau-Thierry one is in the valley of the Marne, a highly industrious, work-a-day river like the Seine, but if possible more picturesque. Certainly there are no poplar-lined river banks quite so charming as those of the Marne. It would be an ideal river on which to journey in a motor boat, and you could even reach the Rhine by the canal which joins the two rivers in their upper reaches. Here's an idea for some one who would like to make an unconventional voyage by motor boat. Chateau-Thierry has a first class literary shrine in the birthplace of

Lafontaine; a historic one in the ruins of its mediaeval chateau, and a sporting one in the site of the famous hill-climb. The hotels here are curiously named; one is called the Elephant and the other the Swan. You take your choice, according as you prefer large or small game. So much for Chateau-Thierry, and if the afternoon is still young you can easily roll off another forty kilometers to Meaux, by the valley road along the Marne, and still arrive further on for the



sight-seeing palate of the most exacting American tourist.

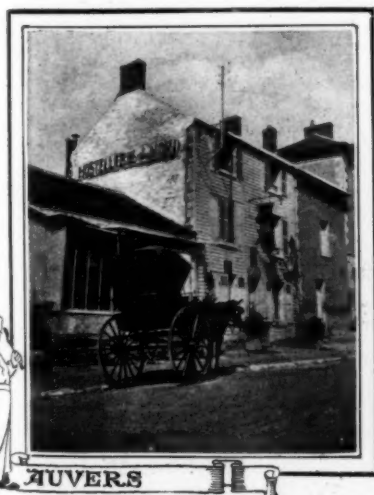
In the Home Land of a World-famed Romancer.

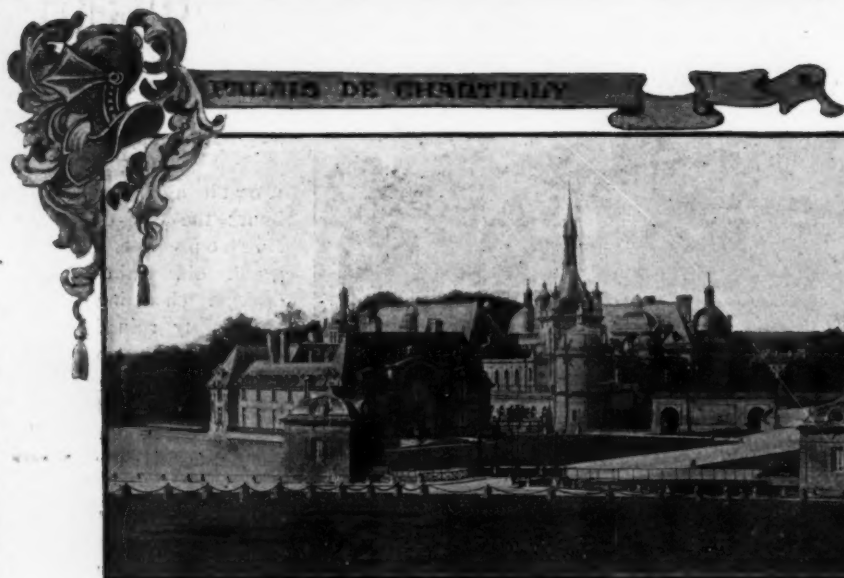
Villers-Cotterets is forty kilometers northwest of Meaux. It can be reached direct from Chateau-Thierry in about the same distance if it is desirable to omit Meaux. It is the birthplace of Alexandre Dumas Père, and the site of an old royal chateau of the Valois, around which still hangs a certain sentimental glamour, in spite of the fact that it has fallen from its high estate and become an almshouse. The Hotel du Dauphin is decidedly the best stopping place for the night in these parts. It is entirely fitted with the famous and deservedly well-thought-of "*chambres hygiéniques*" promulgated, if not invented, by the Touring Club de France, and has got—of all astonishing things—accommodations for thirty automobiles under cover. Dumas Père was born at Villers-Cotterets; the house is pointed out with pride by every resident of the place, and it sits full on the main street. Here, and in the neighboring town of Crepy-en-Valois, Dumas spent the early years of his life, before he went up to Paris to become the greatest romancer of his age.

This Forest of Villers-Cotterets is one of the historic forests of France. It was first set out by François Premier, and beneath its shade have dawdled a whole portrait gallery of historic and gallant figures, the art loving François, his friend Anne de Pisseleu, whom he made the Duchess d'Etampes, his discarded friend, the ageing Diane de Poitiers, who came back again later with the youthful Henri II in her train, and finally there were Henri Quatre and his whilom friend, the fair Gabrielle d'Estrées, who had more than one clandestine meeting here. The forest is not what it once was, the prodigal and selfish Napoleon III having cut it largely down and into firewood, which he sold for a profit to himself. These literary and historic trails stretching all over France are one of the chief charms of travel in this fair land, particularly to one who comes from a country whose literary landmarks do not go back of the era of the "Wayside Inn" or "Rip Van Winkle."

There are two other trails in the immediate neighborhood which are well worth covering if one has the time. One of these is that of the flight of the unhappy Louis and

night's stopping place. Meaux is worth a good hour; the city of Bishops has a grand old cathedral, a charming and dainty ruined chapter house, an old Episcopal palace, a battery of curious old water mills astraddle the river, and the remains of a chateau built by the Counts of Champagne in the thirteenth century. Such a menu should satisfy the





the Royal Family to Varennes, passing through Meaux and Chateau-Thierry, every league of the way outlined and mapped in the written account of literature and history. The other is in the wake of the gentle R. L. S., on that memorable occasion when he made that delightful "Inland Voyage" down into France from Antwerp and the North Sea, via the canals of Belgium, and finally the river Oise. His trail or rather the wake of his little canoe passed close by, at Compiègne in fact. It was here, it will be recalled by all who know this delightful little book, that Stevenson suddenly terminated his voyage, by reason of his having received news in his letters which he made the fatal mistake of calling for at the *poste restante*. That finished his voyage.

Chantilly Equals Versailles in Real Interest.

Crossing through the forest here the writer recently met a little Oldsmobile, merrily churning away without fuss or feathers, and eating up the straight roadway at a good twenty-five-mile-an-hour clip. One sees these little "horseless carriages" quite frequently in Paris, and the French have adopted our own original name for them and call them *voitures sans cheval*, but they are not often met with in the country. From Compiègne to Chantilly is perhaps forty kilometers, following for the most part the valley of Oise, another of the picture rivers of France, but again a most industrious one. The Chateau de Chantilly shares the honors with the Palace at Fontainebleau in abounding interest for the visitor. Each of them is far and away ahead of Versailles or St. Germain, though thousands visit the two latter to hundreds the former. This is inexplicable, of course, but is a demonstration of one of the inconsistencies of the sightseer.

Chantilly, at any rate, needs a guide book to itself, its attractions cannot be catalogued here. Put up at the Hotel du Grand Condé, which sounds romantic, is good and expensive, and very sporty—for the horse racing at Chantilly is, for many, the chief reason for coming here at all, and horsey people demand a showy, luxurious board when they sit down to eat, and much looking-glass in the bar when they drink. All these things are here. At Chantilly let the horse-racing go by the board, and dodge the Irish and American jockeys and stable boys—if you can—and devote yourself to the two Renaissance chateaux, the Ecuries of the Condés and the great collection in the Musée given to the State by the Duc d'Aumale. All this will take half a day—with lunch—but get on to l'Isle-Adam, or Auvers, for the night, unless you insist on those palatial appointments of the hotel at Chantilly with the grandiose name. At Auvers, at the Hostellerie du Nord, you will tumble upon something unique in the hotel line, very simple, very Bohemian—as that term is understood of the people—for the house caters mostly to artist folk, and Parisians at that, and withal the price for everything is very modest. You may dine in the garden courtyard, under a sort of a tent, at a long table, with chickens and pigeons and cats and dogs strolling about and looking for tit-bits, and per-

haps even a stray pet lamb, if the beast hasn't grown into a sheep by this time. If this is a little too much *en famille* and you would have more seclusion you may dine in the paneled *salle à manger* with its walls covered with pictures and croquis by painter folk from Daubigny down to various Montmartre eccentrics.

At last we have swung around the circle, in three days or five, according as to whether we have lingered by the way or made the *vitesse*, as your French chauffeur says, between towns. If one is bound south of Paris, down into the chateaux country—Touraine—it is easy to make one's way via Pontoise, St. Germain, Rambouillet and Chartres. If England's leafy lanes are the objective, another enjoyable three or four days can be put in covering that historic highroad from Paris to Boulogne or Calais. Usually the automobilist from abroad rushes this in a day or less, but this is wrong, of course, for the district is rich in interest.

In outline the itinerary works out something like this: Beauvais (Hotel de France et d'Angleterre), with the most stupendous late Gothic cathedral standing above ground; Amiens (Hotel de Rhin), whose cathedral has been called the Bible of architecture; Abbeville (Hotel de France), where at any rate you should stop long enough to view the Eglise St. Wulfran. After this loaf along easily to Montreuil-sur-Mer, fifty kilometers, and put in the night at the Hotel de France, which bears a date of the sixteenth century over its *porte cochère*. The hotel is a rambling, creaking old structure whose only signs of modernity are in its *salle à manger* and in the electric light wires stretched along its three-century-old beams. When you ring the bell in your bedroom though, you pull a bell-cord, and one of a row of jangling *cloches* rings out down in the courtyard—for any one to answer who happens to hear it. Modernity here hasn't got as far as electric bells.

The passage across to England is best made by automobilists via Boulogne, via Calais automobiles are only carried by cargo-boat. The cost is approximately twenty dollars and the loading, crossing, and unloading will consume half a day. If you are not conversant with the manner of getting in or out of France, and the formalities attendant thereon, you had best get some garage man who looks as though he wouldn't take advantage of you to smooth the way for you, and pay him a dollar or so; it will save you a lot of personal annoyance and perhaps some money. Sergeant, the Michelin agent, would probably do the business as well as any one. The hotels of Boulogne are unlovely and unsatisfying; take the one you best like the looks of, or is most convenient, it will answer as well as any. Finally, you will have as uncomfortable an hour's crossing—in fair weather or in foul—as you will get in these days of usually luxurious travel.





Italy Closes its Race Season with a Double Victory

BRESCIA, Sept. 2.—Owing to the multiplicity of European regulations, two distinct races were provided for by the Milan Automobile Club, to be contested on the Brescia circuit. On Sunday forty machines complying with the conditions first formulated for the German Emperor's race, struggled over the 43 miles of winding circuit until Minoia, driving No. 21 Isotta-Fraschini, captured the Florio Cup in 4:39:53, being an average speed of 64.7 miles an hour. Hemery and Hanriot, for a long time team mates at the Darracq factory, came second and third, both on Benz machines built in Germany.

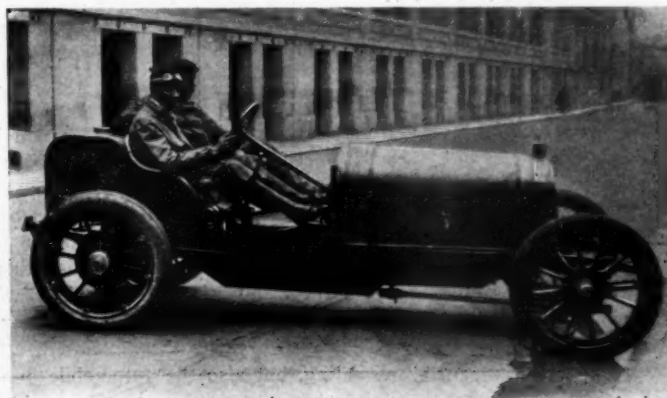
A series of accidents, due in large part to the lack of experience of the drivers in high-speed events, marked the race. Henry Fournier's Itala broke down at about half distance without any injury to driver or mechanic. Later the German Gagneau car, driven by Hieronymus, entered into collision with No. 8 Bianchi, handled by Tommaselli, with the result that both cars had to be withdrawn and Hieronymus suffered a broken nose. Durlacher, with No. 3 Wolsit, an Italian machine built under British Wolsley license, missed one of the turns and shot over a railroad bridge to the track below, being picked up in a rather serious condition. Unfortunately one fatal accident occurred as the result of the breaking of the steering gear of No. 37 Brixia-Zust when traveling at a high rate of speed. Baron de Martino, the driver, was thrown against a tree and instantly killed.

Not more than seven of the drivers, conspicuous among whom were Hemery, Hanriot, Fabry, Fournier and Cagno, had had previous experience in long-distance international races. Practically all the Italian and German drivers were men who had earned their reputation in local races; as several events have proved, a number of such drivers in a big race constitute a source of danger. Nazzaro, who won the first race under German Emperor rules, did not participate, neither did Moore Brabazon, the victor of the Ardennes race under similar conditions. French machines were conspicuously absent, the only representatives being Darracq, Rochet-Schneider and Aries. V. Florio competed for his own cup on a Darracq, with Henry Walker as team-mate.

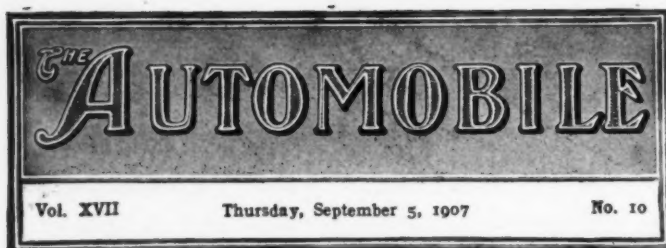
Cagno, starting fourteenth in a field of 17 competitors, won the handsome trophy "Winged Victory," valued at \$5,000, in 4:37:36 for the 301.9 miles, or an average of 65.2 miles an hour. The machines, ten of which had competed in the French Grand Prix, and were called upon to run in this event under similar conditions, failed to approach the brilliant performance of Nazzaro on the Dieppe circuit, when, with his Fiat racer, he averaged 70.61 miles an hour. Considerable allowance must be made for the differing natures of the circuits, the Dieppe course being one of the fastest in Europe and the Brescia roads somewhat winding. Notwithstanding this, however, it is felt that the ten French and seven Italians did not make the best showing under limited fuel consumption rules. The winner only averaged a mile an hour more than the smaller racers under German Emperor conditions, though the average difference in the horsepower ratings of the two classes was about thirty. Fiat and Renault teams did not compete, consequently Nazzaro and Sziisz, who did the fastest work in the Grand Prix, were unable to show their skill on the North Italy circuit. Victor Demogeot, driving the only Darracq machine in the race, came second in 4:40:49, followed at an interval of five minutes by Rougier, driving No. 1 Dietrich.

Starting at 5:30 A.M., and intervals of one minute, the three Bayard-Clément, three Brasier, three Itala, three S. P. A., three Dietrich, Diatto-Clément and Darracq were led on the first round by E. Fitz Shepard driving the Bayard-Clément which he bought when the French factory decided to abandon racing after the death of Albert Clément. On the second round Fabry, on an Itala, got ahead of Shepard, and on the third round the American

dropped down to third position. Later he forged ahead of the Itala and regained second position. While running on the fifth round in fifth position the Bayard-Clément car skidded on crossing the bridge over the Montichiari river, broke down the low railings and dropped into the shallow water five feet below. Shepard broke his collar bone and his chauffeur, Ledmann, had his face cut and bruised. Neither of them, however, is in a serious condition. Shepard's racing career has been one series of ill-luck.



E. FITZ SHEPARD, THE UNLUCKY, ON BAYARD-CLEMENT.



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Influence of Automobile Durability on Demand. Time was and not so very long ago either when it was popularly considered that the automobile industry was supported mainly by that class of autoists who purchased new models with each recurring season. From 1900 to 1904, models not only followed one another so closely, but differed so radically, that cars became antiquated, both in appearance and design, with the passing of a twelve-month. It was necessary to invest in a new car every year in order to be up to date. This certainty of excessive depreciation deterred many a prospective purchaser in the earlier days, and unfortunately, the idea has not been dispelled altogether by any means. There are still those who regard the automobile as fleeting in this sense of the word.

As a matter of fact things have gone to the opposite extreme. The active life of the modern car has been extended so many years that there is every reason to believe that it will exceed that of the average piece of machinery owing to the superior materials and workmanship employed. Moreover, the fallacy of early day impressions is now evident in the number of old cars that are far from being on the retired list and that will do active duty for some time to come. Then what is to become of the automobile manufacturer? ask a few short-sighted alarmists. With cars built to last indefinitely, where is his market to come from? Were it not for the fact that the recent financial upheaval in the industry appeared to lend color to them, such queries

would scarcely merit comment. As it is, they are absurd, being based on the assumption that autoists as a class comprise a body that is stationary, or at least that never increases in numbers. It goes without saying that there is no longer any need to purchase a new car every season, either to be up to date, or to have one that will operate satisfactorily, but that the industry should immediately wane on that account hardly follows as a logical sequence in view of the tremendous increase in the number of autoists with each passing season, as well as the production of machines to suit a far wider range of purchasing ability.



Deceptiveness of Present Day Engine Ratings.

There was much confusion on the part of the man in the street when the automobile manufacturer fell into the habit of bestowing upon his product a hyphenated horsepower rating. It is naturally difficult for the layman to conceive of conditions under which the same motor can produce such varying powers as "24-30" for instance, despite its extreme simplicity to the engineer, and it must be admitted that the explanations forthcoming by garrulous show attendants and others has done far more to add to the confusion than otherwise. Cylinder dimensions have been suggested as an alternative, but of what use are they to the amateur, when in the same breath, the maker informs him that his motor will produce either 40 or 80 horsepower?

So far as the man in the street is concerned, the problem is not of pressing importance, and as a matter of fact, it will work out its own salvation. In the meantime the confusion extant gives rise to some amusing situations. The French makers rate their motors as low as they possibly can because horsepower means taxes in France; ditto in Germany. Hence, a 12 is really a 20; an 18 really a 30-horsepower machine. Here there is no horsepower tax nor anything akin to it, but still there are 30's which are really 50's, also 30's which are 60's. Except for the purposes of racing and hill climbing, what does it matter? The man who owns the machine wants it to pass the other fellow's whether on the level or the hill, and if his be called 30-horsepower and the other man's 50-horsepower, so much more the glory of passing him. It is a strange mixture of meaningless terms that will sooner or later resolve itself without extraneous aid.



Concerning the Show Situation this Year.

Automobile manufacturers have found it possible to beat the calendar by half a year in having their models for the following year on the road in the early summer, and have shown that their efforts in this direction have not ceased by any means, so, like the evening editions of the yellow journals that are on sale by 7 A.M., we may be having 1909 models ready before the 1908 open season is on at all. This last is immaterial, or at any rate, beside the question. The fact of the matter is, this general jump on the part of the makers from December to June, has made necessary a corresponding revision in show dates, which, however, could not be made quite as sweeping as have been the advances already referred to. Last year marked the first departure from the custom of holding a show in the year of the models exhibited. This step brought the opening of the show season from January to early December.

Since then it has been pushed back almost two months, so that the first New York show will be opened in the latter part of October; in fact, such has been the change brought about that the opening of last year's show season will practically correspond to the closing of the 1907 season, barring the newly inaugurated importers' event, which continues the time-honored January date for obvious reasons. With this exception the two New York shows and the Chicago show will be condensed into little more than a month. Such an arrangement not alone benefits the makers by minimizing the amount of attention to be devoted to exhibiting, but also the automobile public as well, by concentrating the show season at a most convenient time of the year.

SESSION OF THE A. A. A. RACING BOARD.

Hereafter any club member of the A. A. A. which associates itself in any manner in the conduct of a race meet will be held responsible for the delivery of the prizes and the enforcement of the rules. This action was taken at a meeting of the executive committee of the Racing Board, held at A. A. A. headquarters, 435 Fifth avenue, New York City, Thursday, August 29.

The resolution adopted and recommended for confirmation by the Board of Directors, which will meet in September, is as follows: "Any club of the A. A. A. which associates itself in any way, wholly or partially, with the proposition of a race meet shall become responsible for the delivery of the prizes as stated on the entry blank, and also for the enforcement of the racing rules of the A. A. A."

Approving the recent action of Acting Chairman Pardington, the United States Motor Racing Association, Inc.—Joseph M. Gaites, president; Fred T. Bailey, vice-president; and W. H. Pickens, general manager—was indefinitely suspended, collectively and individually, and all sanctions granted to the said association were cancelled, such action being taken for irregularities in the conduct of the race meet held at Brighton Beach, New York, August 9-10.

Recognizing that the present racing rules require some revision to meet new and changing conditions, the Board requested its technical advisers, within the next thirty days, to prepare for submission to the Board a draft of those changes which in their opinion would bring about a more satisfactory classification and general results in competition. The technical advisers are: E. R. Thomas, N. A. A. M.; A. L. Riker, A. L. A. M.; Henry Ford, A. M. C. M. A.; J. J. Mann, A. C. of France.

It was decided to postpone the consideration of the rules adopted by the Affiliated Automobile Clubs of the World until the return from Europe of Chairman Jefferson de Mont Thompson and William K. Vanderbilt, Jr., who have had conferences while abroad with representatives of the foreign clubs.

In connection with the hill climb held at Wilkesbarre, Pa., May 30, the protest of Walter White, driving a White steamer, against being barred from the free-for-all event was sustained and he was adjudged the winner of same, his time, 1:49 4-5, being the fastest of the climb. The protest of D. Walter Harper against being barred was also sustained, and he was declared winner of events 4 and 7. The Wilkesbarre Automobile Club was requested to deliver the prizes for these events as above decided.

The decision of Referee Duncan Curry rendered at the race meet of the Atlantic City Automobile Club, held at Atlantic City, N. J., August 5-6, disqualifying A. W. Church's Stearns in event No. 3 on the ground that it did not comply with the definition of a touring car, was sustained. To properly determine the exact division between touring cars, touring runabouts, and runabouts, the Board announced the following definitions:

Touring Cars.—A touring car shall be one provided with a tonneau and seats for at least five (5) adults; two (2) in front, and three (3) or more in the tonneau.

Touring Runabouts.—A touring runabout shall be a car provided with two (2) seats in front, and a single permanent seat in the rear.

Runabouts.—A runabout shall be a car provided with two (2) seats side by side.

The Racing Board not having received a report from the special committee of the Chicago Automobile Club, which was requested to investigate and report on the 24-hour race held at the Harlem track in that city, July 12-13, the Board was unable to give consideration to this event.

Owing to the meager amount of evidence submitted in reference to the 24-hour race at Detroit, Mich., July 21-22, no decision could be reached. Interested parties have been called upon to make affidavits supplying the missing parts of the evidence.

The following were present at the session: A. R. Pardington, acting chairman; R. Lincoln Lippitt, Rhode Island A. C.; S. M. Butler, A. C. A.; A. G. Batchelder, N. Y. M. C.; A. L. Riker, technical adviser; F. H. Elliott, secretary.

A. M. C. M. A. MEMBERS DRAW SHOW SPACES.

With applications amounting to 30,000 square feet of floor space, and but a total of 26,000 square feet available, the drawing for spaces at the Palace show, October 24-31, held at the American Motor Car Manufacturers' Association headquarters on Saturday last in the Spalding Building, was an interesting event. The Reo Motor Car Company was fortunate in drawing number one, which gave it first choice. Others who secured center spaces were the Dayton Motor Car Company; Ford Motor Company; Premier Motor Manufacturing Company; National Motor Vehicle Company; Maxwell-Briscoe Motor Company; Mitchell Motor Car Company; Wayne Automobile Company; St. Louis Car Company; Jackson Automobile Company; Bartholomew Company, and the Mora Motor Car Company. Incidentally, trade conditions came up for discussion, and it was the consensus of opinion that the outlook for 1908 could hardly be better, some of those participating being Benjamin Briscoe (Maxwell); A. C. Newby (National); Gaston Plaintiff (Ford); W. H. Vander Voort (Moline); R. B. Crawford (Crawford); C. F. Case (Rapid); H. O. Smith (Premier); Ray Owen (Reo); Wm. Mitchell Lewis (Mitchell); and Frank Weston (Overland).

BALTIMORE HOLDS LABOR DAY RACES.

BALTIMORE, Sept. 2.—Five events comprised the program of the Motor Car Racing Association on Labor Day at the Gentlemen's Driving Park, and attracted a big field of spectators. Interest centered in the 50-mile race for stripped touring cars, the contestants being two Stoddard-Daytons, an Aerocar, a National, and a Pullman. E. F. Dobson on a Stoddard-Dayton took the lead, followed by the Aerocar until the tenth mile, when the Pullman got second place. Later the Pullman had to retire through the loss of a tire, when the Aerocar secured and retained second place, followed by E. L. Leinbach's Stoddard-Dayton and George Norwood's National. An Autocar driven by E. H. Freas and a Pullman driven by E. F. Dobson competed in the final for the five-mile runabout championship, the Autocar winning by two lengths. W. S. Fisher won the five-mile race for motor-cycles against six others, all riding Indians. The summaries follow:

FIVE-MILE RUNABOUT CHAMPIONSHIP.

1. Autocar, 30-horsepower; driver, E. H. Freas.....7:15 2-5
2. Stoddard-Dayton, 30-horsepower; driver, E. F. Dobson..7:15 4-5
3. Pullman, 30-horsepower; driver, Peter Burgard.

FIFTY-MILE RACE FOR STRIPPED TOURING CARS.

1. Stoddard-Dayton, 30-h.p.; driver, T. F. Dobson.....1:12:50 4-5
2. Autocar, 30-horsepower; driver, E. H. Freas.....1:13:36
3. Stoddard-Dayton, 30-horsepower; driver, E. L. Leinbach.
4. National, 50-horsepower; driver, George Norwood.
5. Pullman, 30-horsepower; driver, Peter Burgard.

DISASTER BEFALLS DENVER TRACK MEET.

DENVER, Sept. 2.—In the 50-mile endurance race at the Overland Park, W. B. Walker, a prominent local business man, was killed by being thrown against a post after a tire had exploded on a turn. E. V. Dasey, who was following, tried to avoid the crowd which swarmed on the track and either lost control of his machine or fainted, for he fell from his car and was killed. Brinker, the only other driver on the track, struck a fence and was bruised.

BOSTON MEET POSTPONED BECAUSE OF RAIN.

BOSTON, Sept. 2.—Heavy rain put the track at Readville in such bad shape to-day that it was impossible for the Bay State Automobile Association to run off its program of races. Postponement was made until Saturday, September 14.

W. K. VANDERBILT DECLINES TO DISCUSS RACE.

W. K. Vanderbilt, Jr., and Mrs. Vanderbilt arrived from Europe on the *Kronprinz Wilhelm* last Tuesday. Before leaving for his cottage at Great Neck, Mr. Vanderbilt said that he had nothing to say concerning the Vanderbilt Cup race.



SIX-CYLINDER Berliet, the latest product of the American Locomotive Company, was charmingly introduced to the members of the press at the Providence, R. I., factory last week, prior to going forth to greet the wide world on its own substantial merits. All the technical journals and representatives of New York's dailies united in response to the company's invitation and spent a few hours wandering through the Berliet factory under the leadership of General Manager James Joyce, Superintendent F. R. Boynton, General Sales Manager F. M. Hoblitt, and Assistant Vice-President R. B. Van Dyke. A 20-mile run to Chepachet Inn, where lunch was served, allowed the party to appreciate the flexibility and smooth running qualities of the new "six." Arthur N. Jervis and Edward F. Korbel planned the visit in an admirable manner.

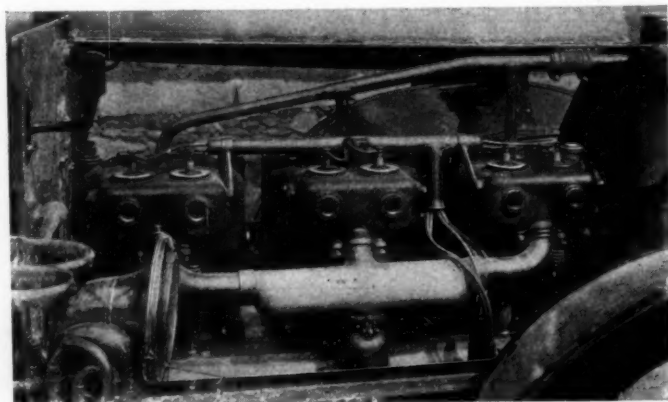
Externally there is practically nothing to distinguish the six-cylinder Berliet from the larger four-cylinder models turned out this year from the Providence factory. Its wheelbase, 126 inches, is identical with that of the 60-horsepower four-cylinder car which it supplants, the bonnet is only about one inch longer, and there is but a very small increase in weight. The new product is in no sense an experiment, well-tried Berliet lines being followed throughout in its construction. Apart from the engine, no radical changes have been made on the new model, the car having four speeds forward and reverse through sliding gear of the selective type, with direct drive on both third and fourth speeds, multiple disk clutch, final drive by side chains, force feed lubrication and four brakes on the differential and rear wheel drums.



MANAGER JOYCE TELLING HIS TECHNICAL STORY.

Naturally a six-cylinder engine differs radically from one with only four cylinders, but in designing the Berliet the differences have been reduced to a minimum. The six cylinders, cast in pairs, have 4 3/4-inches bore by 5-inches stroke, the same dimensions as the 40-horsepower four-cylinder engine, thus valves and kindred parts are interchangeable between the two models. The crankshaft of a six-cylinder engine is always an interesting organ, as well as one which has caused a considerable amount of careful thought on the part of the designer and constructor. In the Berliet the features are two center throws in one line, with the end throws at an angle of 120 degrees. Ignition, as in the other models, is by high-tension Bosch magneto, the cylinders firing in the order 1, 4, 2, 6, 3, 5. Owing to the diminution of the size of the flywheel, it has been possible to hang the motor a little lower without diminishing the road clearance.

In their methods of production the American Locomotive Company occupies a unique position among American automobile manufacturers. Before Berliet was known on this side of the Atlantic, the parent factory at Lyons, France, produced automobiles which were recognized as fit to stand in the front rank of European machines. At the Providence factory all work follows accurately the plans of the



A PEEP UNDER THE BONNET OF THE BERLIET "SIX."

French designers, work being done entirely to metric system to insure absolute harmony with the designers' blue prints.

Wherever imported material offers any advantage over that obtainable in this country, it is employed, the contracts between the American firm and the house under whose license they build allowing all material to be obtained from the factory or through the firm's European suppliers. It would be erroneous to suppose that the Berliet is an "assembled" car. The frame is imported in lengths, cut to size and joined up at the American works; the crankshaft is imported in the rough, camshafts arrive in the form of a steel bar, transmission gears are received in a similar condition; practically all the machining is done here on best American lines, no parts being received in a completely finished condition. Having had opportunity of observing the work on the parent machine, it is not surprising that such a high standard of excellence is set at the Providence works, the aim apparently being not to equal but to surpass, in this respect, the workmanship of the foreign car. To attain this end, every part of the car passes through the hands of the tester at frequent stages, on a plan which allows the detection of the slightest imperfections.

In addition to the 60-horsepower six-cylinder car, to be fitted with touring or limousine body, as desired, the factory will produce a 40-horsepower four-cylinder car with chain drive, and a 24-horsepower town vehicle with shaft drive, carrying either limousine or landaulet body.

STRUCTURAL BRONZE FOR AUTOMOBILE PARTS*

By THOMAS J. FAY, E.E.

THERE are certain parts of automobiles that cannot be well made of die-forgings or pressed steel and casting must be resorted to. In casting, strength is not so easily attained as would be the result of a die-forging process or if pressed steel parts are taken into account. On the other hand, steel castings are very prone to develop "wasters," while cast gray iron is far from a strong product and cast aluminum is, as a rule, a most uncertain quantity. It follows, therefore, that "steel-bronze" cast is a very attractive product and one to be relied upon for good castings in almost every instance, if the product comes from a foundry accustomed to turning out this class of product. True, this product requires an exercise of skill born of experience, else "wasters" may be the sole reward, but the fact is steel-bronze can be procured readily from reliable sources.

Steel-bronze, otherwise known as manganese bronze, obtains as castings with excellent physical properties, as the tests here given will amply demonstrate, and the performance of this product in service is very praiseworthy, although it is the writer's belief that the use of this product has been carried too far in some cases, as for illustration, a steel-bronze axle costs quite as much as a die-forged, chrome-nickel steel axle, whereas the latter product is far superior for the purpose, involving, as it does, work of a dynamic character. Steel-bronze is used for crankcases, gearcases, steering gear housings, lever-box housings, thrust-block housings, pedal-shaft supports and such other parts as are not easy to produce by any but a casting process, and, barring the cost of steel-bronze, there can be no fair criticism of its use for such purposes, provided, as before stated, die-forgings of steel or pressed steel cannot be used instead.

Of steel-bronze there are two grades, one of which is for castings, while the other is suitable for die-forgings or rolled sections. As regards the die-forged product, it is not used for automobile parts for the very simple reason it is not as good as die-forgings of steel and it is more costly, and if die-forgings can be made the use of either grade of steel-bronze becomes at once superfluous. In motor boat work the steel-bronze die-forgings should serve a useful purpose, for their oxidization is a factor and electrolysis sets in under certain conditions. It follows, therefore, that, steel-bronze being a product that behaves quite decently in salt water, it is very serviceable for motor boat work in which strength is requisite if the weight is to be kept low, and it must be if speed is a factor.

Having set forth the uses to which steel-bronze can be properly put, it may be well to discuss its production and show its characteristics and its eccentricities, thereby rendering all possible aid to designers. While steel-bronze can be cast into intricate shapes and very thin— $\frac{3}{32}$ inch for motorcase walls—yet even so, care should be exercised to make all walls and connecting parts of an even thickness and radii should be liberal to avoid bunching metal at angles; indeed, the fact that the metal is approximately twenty times as heavy as a mahogany pattern can be compensated for by making the walls thin, the bosses small and the radii enough to obviate large fillets and other accumulations.

It is a little difficult to design for equal weight and equal strength, considering aluminum as an alternative, but it is not difficult to realize

- (a) double the strength as compared with aluminum for
- (b) one-half more weight than aluminum.

Clever designers can do better than this, but it requires the utmost care in designing to keep the weight well within bounds. The test records XVI., XVII., XVIII., XIX. and XX. will afford an excellent idea of just what this metal affords by way of

strength, and the chemical composition for sand casting ingots will there be found. In considering this question of design and strength, it may be well to here interject a warning, as it were. Unscrupulous brass foundries are prone to fill on phosphor or other bronze as a substitute for steel-bronze and for flywheel work this is a very dangerous thing to do.

The author has had a good deal of trouble with what was called manganese bronze—steel-bronze—but generally found such product not to be what was claimed for it, and upon procuring real steel-bronze the trouble disappeared. This product is more troublesome to make and costs more to procure, and it not infrequently happens that foundrymen labor under the impression that users do not know what they want or that they do not know the difference between steel-bronze and phosphor-bronze.

As a rule a flywheel of a good diameter on a motor designed for high speed will locate the difference, but unfortunately a flywheel in disrupting does serious damage. In any case, for this class of work the steel-bronze should be procured from some reliable source of supply. In the sand castings as compared with the die-forging steel-bronze, the difference lies in the fact that for the sand casting product aluminum is present and the zinc content is greater. In the sand casting product the aluminum plays an important part, but the presence of the aluminum defeats die-casting. Aluminum in sand castings imparts soundness, but it must be added cautiously and in small increments. The right amount of aluminum has a quieting influence on the product and enables teeming to be accomplished early and under favorable conditions. An excess of this ingredient would produce what the steel man terms "constitutional segregation," and on the whole a most unruly product.

By tracing the entectic of the product steel-bronze, it will be found that the relation of copper to zinc should be 55 to 45; that is, the best product comes from the use of 55 per cent. copper and 45 per cent. zinc. The analyses given do not show exactly this

CHEMICAL COMPOSITION			
CARBON	TOTAL		
	COMBINED		
	GRAPHITE		
	FERRITE		
	PEARLITE		
	CEMENTITE		
Cr.		Ni.	
V.		W.	
Mn.		Si.	
Al.		Cu.	
S.		P.	
Sn.		Zn.	
Pb.		Sb.	
As.			
PHYSICAL PROPERTIES			
T.S.	LBS. PER SQUARE INCH	70410	
E.L.		32197	
EX.	PER CENT.	31	
CO.		30.4	
PROOF	DIAM. "	1.00	
	LENGTH "	2.00	
FRACTURE			
RATING	U.		
	H.		
TREATMENT		CASTING	

SUBJECT: STEEL BRONZE

NUMBER: XVI MARK: THOMAS

FROM: WILLIAM CRUMP & SON

S. B. & E. CO. NEW YORK, 4-17-07

COUPON FROM PROPELLER

HUB OF MONITOR NO 7

*Extract from "Part Four," "Materials for Automobile Construction," by Thomas J. Fay, published by the Class Journal Publishing Company, New York.

CHEMICAL COMPOSITION		
CARBON	TOTAL	
	COMBINED	
	GRAPHITE	
	FERRITE	
	PEARLITE	
	CEMENTITE	
Cr.	Ni.	
V.	W.	
Mn.	Si.	
Al.	Cu.	
S.	P.	
Sn.	Zn.	
Pb.	Sb.	
As.		
PHYSICAL PROPERTIES		
T.S.	LBS. PER SQUARE INCH	71047
E.L.		36924
EX.	PER CENT.	29.5
CO.		31.4
PROOF	DIAM. "	1.00
	LENGTH "	2.00
FRACTURE		
RATING	U.	
	H.	
TREATMENT CASTING		

SUBJECT: STEEL BRONZE
 NUMBER: XVII MARK: THR-SONS
 FROM: WILLIAM CRAMP & SON
S.B. & CO. NEW YORK, 4-17-07
 COUPON FROM HUB OF
 PROPELLER OF MONITOR N°7

latter name is not very appropriate, because the manganese merely serves as a carrier for the iron and the manganese is not always present excepting perhaps for a mere trace in the finished product. On the other hand, the iron is always present, and it is the iron that imparts the extra qualities, whereas the manganese, once it serves the one purpose of introducing iron to the entectic, passes off and ceases to serve as a factor.

If, on the other hand, manganese is not used at all and iron is introduced, the iron will not alloy with the copper-zinc entectic, and the iron will be found as nodules or shot in the "frozen" castings. True, manganese itself is an intensifier, but as such it is a weakling as compared with iron, and besides, the presence of enough manganese to materially influence the tensile strength would be detrimental in other ways, as, for illustration, the elastic limit would undergo a marked depression, which would be a great misfortune, for that property of steel-bronze is low enough at all events, although it is high as the same phenomenon in Bessemer steel, and that is saying a whole lot for a casting.

Tin in quite small increments has an especial advantage in that it increases and defines the elastic limit, but an excess of tin would defeat its usefulness, since the casting would become brittle and act the same as "cold short steel." The tin, then, must be added carefully as to amount, else the castings will be treacherous, and in automobiles this property must be guarded against at all hazards. The lead found in the composition comes with the zinc as an impurity of the latter. Lead is not wanted and very pure spelter should be selected, else the lead content will amount to enough to make a noticeable depression in the strength of the steel-bronze.

In the production of steel-bronze both for castings and for die-forgings or rolled sections the process is not unlike the process that obtains in the manufacture of steel, in important respects at any rate. In the production of steel, as is well understood, the ores are reduced in a blast furnace and come out as pig. This product is remelted in a converter or a furnace and is poured into ingot moulds. The ingots are then worked up into boss and shapes. Or, in the gray cast iron production, the blast furnace "pigs" are charged in a cupola and the out-pouring is run into moulds to form castings of any desired shape possible to cast. So it is with the steel-bronze, and the steel alloy, so called, which corresponds with the blast furnace "pig," must be evolved by a process, and this product, remelted in crucibles or a converter, is poured into moulds for casting if it be so mixed as to serve for sand casting, or it is poured into ingot moulds for rolling if it be mixed according to the requirements of the work.

The steel alloy, then, must at first be produced, and in this process ferro manganese is a requisite. This product holds:

Ferro Manganese.

Manganese.	Iron.	Carbon.
80 per cent.	14 per cent.	6 per cent.

taking round numbers for it. The impurities in this product are sulphur, phosphorus and silicon, but the percentages are small and it is not definitely known if these impurities do damage as they do in steel, even when present in minute increments.

Besides ferro-manganese, "spiegeleisen" can be used, the composition of which is as follows:

Spiegeleisen.

Iron, 80 per cent.	Manganese, 20 per cent.
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in round numbers, and neglecting again the impurities as silicon, sulphur, phosphorus and manganese.

The ferro-manganese is the most attractive and can be obtained at low cost in lumps, easily broken, and quite pure. The amount required for the purpose is but slight at all events. The iron used in this work should be pure "cement bars," preferably the Norway iron product, nor should the iron be too small, else the product will oxide away and introduce unnecessary trouble. The bars, say half-inch, cut into short strips, would serve perfectly the main point, being able to pack the crucible with as much of the

ratio, but it is not easy to fix the relation in practice so that it will be precisely in accord with theoretical considerations.

The name "steel-bronze" comes from the fact that iron is a content in the product. To be able to introduce the iron into the mixture manganese is used, and it is on this account that the same product takes on the name "manganese bronze." This

CHEMICAL COMPOSITION		
CARBON	TOTAL	
	COMBINED	
	GRAPHITE	
	FERRITE	
	PEARLITE	
	CEMENTITE	
Cr.	Ni.	
V.	W.	
Mn.	Si.	
Al.	Cu.	
S.	P.	
Sn.	Zn.	
Pb.	Sb.	
As.		
PHYSICAL PROPERTIES		
T.S.	LBS. PER SQUARE INCH	71874
E.L.		37560
EX.	PER CENT.	27.5
CO.		28.1
PROOF	DIAM. "	1.00
	LENGTH "	2.00
FRACTURE		
RATING	U.	
	H.	
TREATMENT CASTING		

SUBJECT: STEEL BRONZE
 NUMBER: XVIII MARK: THR-SONS
 FROM: WILLIAM CRAMP & SON
S.B. & CO. NEW YORK, 4-17-07
 COUPON FROM STARBOARD
 PROPELLER OF MONITOR N°7

material as possible, because, however carefully the crucible is packed, the "voids" will foot up to a considerable percentage, and as a result a full charge does not make a full crucible when the charge becomes molten.

The charge in the crucible is recommended as follows:

Crucible Charge.

Iron.	Ferro Manganese.	Tin.
55 parts.	13 parts.	32 parts.

but the mode of procedure should be thus:

In a graphite crucible place the iron and the ferro manganese, cover the products with charcoal and put a lid on the crucible. Then urge the fire to its utmost until the charge is molten.

Find whether all the lumps are melted by using a plumbago stirrer, and when the charge is molten add the tin. Having thus proceeded and when the tin also is liquid, which takes but a moment, stir the charge and "teem" it. The ingot moulds should be quite small and of a shape or section that will render the ingots easy to break up.

With the steel alloy thus produced, the process involved in the production of steel-bronze castings will be simplified and the then procedure will be as follows:

Assuming a graphite crucible will be used, the charge will be:

Copper.	Zinc.	Aluminum.	Steel Alloy.
56	43	$\frac{1}{2}$	2

The procedure will be as follows:

1. Put one ingot of say 15 pounds of copper into the crucible.
2. Cover with charcoal.
3. Bring the copper to a full red heat.
4. Add the steel alloy.
5. Stir.
6. Urge the heat until the steel alloy melts and alloys with the copper.
7. Add the aluminum.
8. The aluminum will induce extra heat and the mixture should be agitated at this time to help alloy the mass.
9. Add the balance of the copper.
10. Stir.
11. Add the zinc.
12. Stir.
13. Pour into ingots.

If the pouring into ingots is delayed too long, the "over heat" will result in a large loss in zinc and destroy the balance desired for the components. The crucible charge takes into account some loss and the ingots should come out with components, viz:

Ingot Composition.

	Per cent.		Per cent.
Copper.....	56.00	Tin.....	0.75
Zinc.....	42.38	Aluminum.....	0.50
Iron.....	1.25	Manganese.....	0.12

Authorities on this subject point out that a loss of zinc attends each remelt, so that steel-bronze scrap soon becomes useless for "home scrap" in the production of steel-bronze products. The proportions above set down will allow for a double remelt, but no more, excepting at the expense of quality. With the ingots available, and they can be purchased from Krupp or Cramp, in case it is desired not to go into their production, the question of castings becomes the remaining issue, but it is an issue and must be attended to by the most scrupulous care.

The Casting Process.

1. Have the moulds ready.
2. Do not allow the molten charge to soak; hence, to repeat, have the moulds ready.
3. Cover the charge in the crucible with charcoal—a good cover.
4. Melt at the lowest possible heat.
5. Do not allow the metal to "flare," especially if the castings are to be large.
6. For small castings a somewhat higher heat is possible and may be desirable.

CHEMICAL COMPOSITION			
CARBON	TOTAL		
	COMBINED		
	GRAPHITE		
	FERRITE		
	PEARLITE		
	CEMENTITE		
Cr.		Ni.	
V.		W.	
Mn.	0.012	Si.	
Al.	0.51	Cu.	56.23
S.		P.	
Sn.	0.68	Zn.	41.16
Pb.	0.019	Sb.	
As.		Fe.	1.41.
PHYSICAL PROPERTIES			
T.S.	LBS. PER SQUARE INCH		71423
E.L.			38197
EX.	PER CENT.		24.5
CO.			24.8
PROOF	DIAM. "		1.00
	LENGTH "		2.00
FRACTURE			
RATING	U.		
	H.		
TREATMENT			CASTING

SUBJECT: STEEL BRONZE
 NUMBER: YIX MARK: 8015
 FROM: WILLIAM CRAMP & SON-
S. B. & E. CO NEW YORK, 4-17-07
 TEST OF THE "KRUPP" STEEL
 BRONZE SHOW ABOUT THE
 SAME QUALITIES.

7. A slight "flaring" of the zinc on the surface will denote this condition.
8. In any case, pour at the dullest possible heat.
9. Moulds should be carefully made and the moulder should use skill and judgment.

The points of advantage in the procedure, as regards the steel-bronze products, are points such as would be observed in all

CHEMICAL COMPOSITION			
CARBON	TOTAL		
	COMBINED		
	GRAPHITE		
	FERRITE		
	PEARLITE		
	CEMENTITE		
Cr.		Ni.	
V.		W.	
Mn.	0.01	Si.	
Al.	0.47	Cu.	56.11
S.		P.	
Sn.	0.75	Zn.	41.34
Pb.	0.02	Sb.	
As.		Fe.	1.30
PHYSICAL PROPERTIES			
T.S.	LBS. PER SQUARE INCH		
E.L.			
EX.	PER CENT.		
CO.			
PROOF	DIAM. "		
	LENGTH "		
FRACTURE			
RATING	U.		
	H.		
TREATMENT			

SUBJECT: STEEL BRONZE
 NUMBER: XX MARK: 8015
 FROM: W. CRAMP & SON-
S. B. & E. CO NEW YORK, 4-17-07

CHEMICAL COMPOSITION			
CARBON	TOTAL		
	COMBINED		
	GRAPHITE		
	FERRITE		
	PEARLITE		
	CEMENTITE		
Co.	Ni.		
V.	W.		
Mn.	Si.		
Al.	Cu.	60.00	
S.	P.		
Sn.	Zn.	40.00	
Pb.	Sb.		
As.	Fe.	0.70	
PHYSICAL PROPERTIES			
T.S.	LBS. PER SQUARE INCH	87000	
E.L.		47500	
EX.	PER CENT.	17	
CO.			
PROOF	DIAM."	0.75	
	LENGTH"	8.00	
FRACTURE		D.	
RATING	U.	22.82	
	H.	7.9	
TREATMENT		ROLLED	

SUBJECT: TOBIN BRONZE
 NUMBER: C.1 MARK: TOBIN
 FROM: E.T. HUNGERFORD CO.
 NEW YORK, 4-17-07

USED FOR PROPELLER SHIFTS
 IN MOTOR BOATS BECAUSE IT
 IS NOT CORRODED BY THE
 ACTION OF SEAWATER
 WEIGHT, 0.291 POUNDS PER
 CUBIC INCH
 BELONGS TO THE STEEL
 BRONZE GENERAL.

brass and brass-alloying processes. It follows, therefore, that some conditions are so general as to render their application quite general.

It is reasonable to suppose, and in fact quite proper to conclude, that in general "soaking" will be to the detriment of the product. This is amply borne out by the fact that for bronzes in general the metals are melted in the order of their fusion point, i.e., the metal with the highest fusion point comes first, and the remaining components as a rule are added in accordance with their respective fusion points, so that the component with the lowest fusion temperature comes last; indeed, some products are added after the crucible is removed from the heat and just before teeming. Each product has its own especial features, and they should be observed, but the foregoing holds, in the main, and the closer the practice approaches the natural tendencies the less will be the chances of realizing poor results.

Take, for instance, the practice of using "coolers," that is, waster castings, to cool overheated crucible charges before teeming. This use of "coolers," while it cannot be set down as good practice at all, is positively ruinous in so far as steel-bronze casting is concerned. In other words, the remedy for a wrong, while it may be the best thing under the circumstances, does not eliminate all the ills that follow the perpetration of the wrong.

There are one or two other points that should be mentioned here, because steel-bronze is at least one product that will go wrong on very slight provocation. Take, for instance, the question of "deadheads." As before stated, steel-bronze will not do under numerous remelt conditions; in other words, it is not valuable as "home scrap" result. "Deadheads" are not wanted, and the tendency is to limit the sullage piece, or deadhead, as it is called, because it is not delivered to the customer and is not paid for unless the customer pays an extra pound price to compensate it.

The sullage piece, on the other hand, contains the oxides and floatage, or other impurities, and if the "head" is stopped off below the needs of the occasion the result is the oxides and impurities will be found in the casting instead of where they belong, in the sullage piece. And again, the "ingate" or gates should

be carefully placed, and if possible the design should be such as to render gating easy and avoid branch gates, horseshoe gates and skim gates, although finger gates are fairly good for feeding to several small castings through runners, but "plump gates" are the most desirable, since a plump gate is the most direct gate.

The foundryman is not to blame for much of the bad work, but the "goffer," or foreman, in the average foundry is not averse to shedding all blame. However, patterns are prone to evils and designs do oftentimes foreshadow bad patterns and worse castings. The trouble is that draftsmen, as a rule, do not know a "match" or "oddside," that is, a block of plaster or hard sand, in which a pattern is partly imbedded for giving shape to surfaces of separation between the parts of a mould, and one may say, a set of "monkey knuckles," which are indentations due to irregular ramming.

In other words, draftsmen do not know what to do to aid the "goffer," and as a rule a foundryman cannot draw anything, unless it is to make a "clean lift" when a pattern is drawn from a mould, and even that is only possible if designs permit and patterns have the requisite "draft" and "drawing straps," if they are needed anyway. Moulders know as much about drawings as draftsmen do about moulding, and the sum total of this knowledge would never stop up a "flue."

There is one other point about this matter that should be looked after, i. e., moulders are wont to get as much weight into a casting as they possibly can. Weight is what is paid for, not pieces. They accomplish this by "rapping" in excess of the amount required to clear the pattern, although it will be understood some rapping is necessary to afford a "clean lift." In many cases under-cut patterns, requiring, as they do, a "draw back," lead to complications and wasters, and on the whole, while the foundry has its own set of obstacles, as before stated, the drawing and the pattern can in a large measure account for the failures that beset the foundry.

Having thus, at least, intimated that steel-bronze castings, to be as good as they can be, can also go wrong much easier perhaps than ordinary brass and bronze castings, it may be well to allow space in which to further discuss the remaining steel-bronze product as used for sheets, die-forgings and rolled sections. The mixture for this product, as before stated, holds no aluminum and somewhat less zinc, or "spelter," as it is generally termed. Moreover, the copper is increased a little, so that to sum up, one would say one component is eliminated, one other is diminished and one is increased to make up the difference. The resultant mixture is practically what has long been known as "Muntz" metal, which product is generally understood to hold the components, viz.:

Muntz Metal.

Copper, 60 to 62.

Zinc, 38 to 40.

Parts by weight.

For steel-bronze the steel alloy previously mentioned must be utilized and so the following would hold:

Crucible Charge.

Copper.

Zinc.

"Steel Alloy."

60

39

2

The mode of procedure will remain substantially as before, that is:

1. Put one copper ingot of say 15 pounds into the crucible.
2. Cover it with charcoal.
3. Bring the copper to a full red heat.
4. Add the steel alloy.
5. Stir.
6. Urge the heat until the steel alloy melts and alloys with the copper.
7. Add the balance of the copper.
8. Stir.
9. Add the zinc.
10. Stir.
11. Pour in the ingots.

HELPFUL HINTS FROM MANY SOURCES

THERE is a prevalent idea among automobilists, says a Michelin expert, that a tire which has begun to show signs of weakness can be strengthened by putting a canvas lining over the fibre. Frequently a worn tire is shipped to the factory with instructions to renew the canvas. A moment's thought would show that such an order, which is equivalent to a request to re-make the carcass of the tire, is impossible of execution. It is possible, however, to add an interior lining, but that this would give any greater solidity or give any measure of security is an illusion.

Some years ago a canvas protector was glued to the inside of tires; but it is incorrect to suppose that this lining was added with a view of strengthening the fibre. Its object was quite different. One of the most difficult operations in the construction of a tire was to get such an assemblage of fibres that the interior of the shoe would be so smooth that it would not injure the air chamber. For a long time it was impossible to make this smooth surface, and as a substitute a lining of finely woven canvas was attached to the carcass. Progress has been made in recent years, the protective lining being abandoned as useless, as the canvas surface was given a finer finish.

With modern tires, it should be remembered that less chalk is needed than was formerly the case. The former rougher surface absorbed a large quantity of chalk, a defect which has been remedied in up-to-date automobile shoes. If an excess of French chalk is used, it will agglomerate, form a hard body and be injurious to both the air chamber and the fibre of the shoe. All that is now necessary is to dip a soft cloth in the chalk and rub it over the surface of the air chamber. It is wrong to empty a handful of chalk into the shoe, as many automobilists do, and trust to it spreading over the surface as the wheel is turned around.

Exhaust Gases Are Becoming Purer.

So far as visible exhaust smoke is concerned, many automobilists have attained absolute perfection, said Dugald Clerk in a paper read before the Engineering Section of the British Association. Valuable experiments in this matter were made by the Royal Automobile Club of Great Britain with engines running under differing conditions. It was found that though many of the cars burned the mixture given to them in a most complete manner and evolved a minimum of carbonic oxide gas, others showed the presence of carbonic oxide in the exhaust greater than two per cent. The British Club had decided to continue these experiments later, but meantime Dugald Clerk examined the exhaust gases on his own car with the following results:

	Percentages of CO in Exhaust Gases.		
	April 23. Per Cent.	May 7. Per Cent.	July 3. Per Cent.
Engine throttle full open. Car climbing hill	3.6	3.6	2.2
Engine throttle less than half open. Car running on level.....	6.9	4.2	2.4
Engine running without load. Car standing	0.5	0.4	1.8

It is highly desirable that the exhaust gases of automobiles should contain a minimum of carbonic oxide, in view of the rapid increase of their use in large cities. In the open road, a little carbonic oxide rapidly diluted by air would do no harm, but in large cities, when horse traction is replaced almost entirely by motor vehicles, it will be necessary to look into this carbonic oxide question with great care.

A Remedy if Your New Driving Chains Are Noisy.

When new driving chains are fitted to an old automobile they are apt to make their presence heard in an unpleasant manner, especially when climbing a hill. The reason is that the pinions on the countershaft, although they may appear to be in good condition when examined superficially, have become worn and

will not quietly accommodate the new chains. Instead of buying new pinions, as might at first suggest itself, perfect conditions can be obtained by merely transposing them, putting the left hand pinion to the right and the right hand one to the left. The forward face of each tooth has become worn through friction, but the opposite side being only occasionally used for reversing will be found to be as good as new. Transposing the pinions presents a practically new face to the new chains and suppresses all noise. The teeth of the road wheels being twice as numerous will not readily show the same defect; when in length of time they become worn also, a new surface can be obtained by changing the wheels to opposite sides of the car.

Where Dismountable Rims Need Special Care.

Dismountable rims—which must not be confounded with the detachable types running them so close for popular favor—require certain attentions which are not necessary with the commoner kind consisting of a metal rim permanently attached to the wood felloe. An automobilist writing to *La Pratique Automobile* relates his experience as follows: A rear tire lost its sustaining air; examined at the garage, no trace could be found of nail or stone or any defect discovered in the valve. The following day another tire collapsed in the same way, but left indications of its

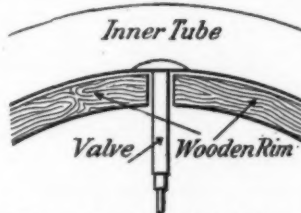


FIG. 1.—Showing valve held in position by wooden rim.

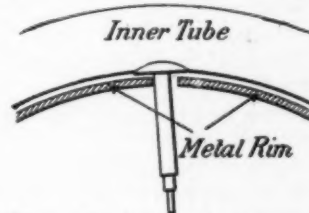


FIG. 2.—Showing necessity for care in adjusting dismountable rim.

defect. When a tire is mounted on a fixed rim the valve is passed through the hole provided for it, the tube slightly inflated, then straightened out if necessary. The thickness of the wooden rim maintains the valve in its normal position, as will be seen in Fig. 1, until it is held there by the nut provided for that purpose. The dismountable metal rim, owing to its thinness, cannot serve to guide the valve in position, consequently when the lugs are being fixed there is a danger of dragging the tube and throwing the valve out of true, as shown on Fig. 2. It is an experience well known to cyclists. When the dismountable rim is fixed on the wheel the twisted valve stem is forced into an upright position, with the inevitable result that the air chamber is strained and bursts later or is torn immediately.

Four Sources of Light in a Single Lamp.

A quadruple lamp which should prove useful to automobilists is described in *Omnia*. It provides four practical methods of lighting: an ordinary carriage candle, held by a spring; gasoline by means of a Pigeon safety lamp; acetylene, by inserting a burner; electricity by butting in a small bulb. Each of these four can be slipped into position without the use of any tools or any adjustments whatever. The lamp is strongly constructed in brass and guaranteed not to blow out in any wind.

How to Fix That Troublesome Little Nut.

The automobilist who is troubled with nuts that will work loose despite the frequent use of a key need not search far for a remedy. Paint the end of the thread or drop on a little varnish and the small annoyance will be at an end. A single drop of solder will be equally effective. To slacken the nut a little extra force will have to be used, but it is not sufficient to cause any damage to either the nut or the thread.



"PARTY CAR" CONSTRUCTED BY A MASSACHUSETTS DEALER.

NEW SOURCE OF PROFIT FOR GARAGE KEEPERS.

That there are other methods of increasing the income beside that derived from selling and repairing cars does not seem to have occurred to the majority of garage keepers. Most of them do more or less renting business, to be sure, but W. H. Marble, of Brockton, Mass., who handles the Winton, Locomobile, Cadillac and Columbia cars in his district, seems to be one of the first to realize the possibilities of a sightseeing car as a source of profit. He calls it a "party car," which is probably a far more apt designation for it in a small city, and the photograph gives an idea of how successful he has been in building one for himself, as it is his own work. It is provided with a four-cylinder vertical motor, rated at 40 horsepower, and on a recent trial trip made 82 miles at a good rate of speed without a stop for repairs or adjustments.

The transmission consists of a planetary gear and Mr. Marble has introduced an excellent feature by providing a special clutch between the motor and the gear, so that when the motor is running with the car standing, the gear is idle, thus eliminating the noise and attendant wear on the gear. The wheelbase is 13 feet and the length over all 17 feet 6 inches. The ignition is of the high-tension type, while the lubrication is taken care of by a Hill Precision oiler. Five seats are provided, and these, in addition to the driver's seat, give it a capacity of 22 passengers. The car was designed and built for renting, but it has worked so well and come in for so much favorable comment that Mr. Marble will probably build duplicates of it to order.

CONSIDERS WOMEN MOST CAREFUL DRIVERS.

John W. Haynes, well known as a driver of racing cars, and the assistant sales manager of the Dragon Automobile Company, has the following to say about the driving of cars by women:

"I have observed that women who learn to drive cars are as a rule exceptionally capable after they have mastered the mechanical details of the work. It is true that they are not as daring as men in all emergencies, but this, to my mind, is rather a recommendation than a drawback. Most men take too many chances with cars. Judgment may be good with them nine hundred and ninety-nine times, but the thousandth chance taken is apt to be their downfall.

"A woman does not take chances, and she brings her car and its human freight home without damage. None of the accidents which the newspapers 'play up' with inch-long headlines occur when women are driving. Someone recalled this fact the other day when a number of experienced drivers were discussing the subject and a veteran of the industry who was there remarked that not only was this true, but it had been his experience that the cars which he had sold for women to drive had been the subject of less repairing than those which were driven by men, particularly by professional chauffeurs. One reason for this, he thought, was that women did not try experiments with cars. When the cars were running well they usually let them alone. This, he thought, was an exceedingly desirable trait."

ONE MAKER ON SEALED BONNET TESTS, ETC.

"I cannot see," says Henry Ford, "what is proved by a contest in which the bonnet is sealed, but the drip pan may be removed so that practically any operation can be performed except actually taking the motor apart and reassembling it. Tests in which no account is taken of adjustments made or parts replaced can have no real value in the eyes of practical men—and any person who has driven a car one season cannot be misled very far in such matters. Seems to me these stunts which are so much in favor just at this time belong to the same category as those fool photographs showing a car submerged in a stream so that the carburetor must be full of water and the ignition system so drenched it will be out of business for several hours. Such pictures fool no one so much as the persons who go to the expense and trouble of taking them—and cleaning the carburetor afterward.

"The only test that tells anything is one in which the rules are such that only one car can win, and where the element of chance is reduced as much as possible. Many cars of indifferent quality run for weeks without adjustment of any kind, and a sealed bonnet would not alter the conditions or the result; while, on the other hand, the best car ever made may call for adjustment at any moment—it's all a matter of 'chance, accident and circumstances,' as Colonel Ingersoll used to say."

THROUGH ACRES OF CORN AND TOBACCO.

WASHINGTON, D. C., Sept. 1.—Within a radius of 50 miles of Washington are many interesting and picturesque one-day tours, but these have become so familiar to Washington automobilists that a new short tour has long been sought. It has remained for Wallace C. Hood, manager of the Motor Car Company, local agents for the Peerless, Thomas, and Stevens-Duryea, to blaze a new tour. It is to Chesapeake Beach, located on the shores of Chesapeake Bay, some 40 miles from the National Capital, and while it is a strenuous trip, the scenic features en route will more than compensate those who may make the trip.

Good roads are encountered until Upper Marlboro, Md., is reached, this point being about half way. From there on to the beach the roads are very sandy and in some places are so narrow that two cars could not pass each other if they happened to meet. The soil is very rich and many acres of corn and tobacco, the staple products of the region, are passed. There is plenty of woodland and a number of streams, together with quaint old colonial houses and rail fences, to add to the picturesqueness of the scenery, which is prevalent in Anne Arundel county, where the old well shown in the photograph is located.

A 45-horsepower Peerless touring car was used in making this trip, and as it was the first automobile that had ever been over the road between Upper Marlboro and the bay, the car and its occupants naturally attracted much attention.



THE PEERLESS HALTS NEAR THE "OLD OAKEN BUCKET."

LETTERS INTERESTING AND INSTRUCTIVE

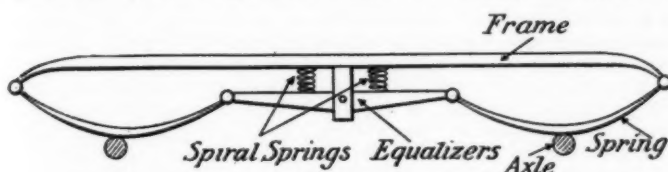
WHY EQUALIZER SPRINGS ARE NOT USED.

Editor THE AUTOMOBILE:

[880.]—Will you kindly advise me the reason why equalizers are not used to absorb road shocks when a car is equipped with semi-elliptic springs? They are in successful use in railroad service on cars that are equipped with only four wheels. A SUBSCRIBER.

Watertown, S. Dak.

Apart from certain structural difficulties in the application of this type of suspension to an automobile, the rear wheels of which have to take the driving effort while the front wheels are steering, there are radical differences in working conditions which make the equalizer unsuitable for other than railroads. Running on a rigid steel bed of unvarying surface, the springs of a railroad carriage are only required to absorb a minimum of vibration and their deflection is kept within well defined limits. The effect of the equalizer is to distribute a vibratory wave over a larger area, thus reducing the disturbing movement communicated to the suspended vehicle. Practically the equalizer



SKETCH OF THE EQUALIZING ARRANGEMENT PROPOSED.

amounts to a three point suspension, and as such gives good results when used under fixed conditions. In the automobile the problem is entirely different, the springs working under much more strenuous conditions, frequently on bad roads and at high speeds being called upon to furnish their maximum deflection. To put it in a simple manner the equalizer would be too good for the rougher work of an automobile; road shocks, which under the standard system of independent springs can be absorbed by the one spring receiving the shock, would be distributed over the entire chassis, causing an excessive oscillation injurious to the driving mechanism and dangerous for the stability of the car. The crux of the matter lies in the differing conditions under which the two classes of vehicles work, the railroad carriage being subject to short vibratory waves and the automobile having to withstand sudden shocks and lateral thrusts communicated not only to the body, but to the driving mechanism. To apply this method of suspension without redesigning the entire automobile would, as can readily be seen, result in considerably shortening the wheelbase for a given length of body, a change which would not be beneficial to the life of the engine or the comfort of the passengers, as everyone is aware who has made comparisons of the ease of riding on a well-centered body and one in which the seats extended far behind the center of the springs.

INFORMATION ON SOLDERING ALUMINUM.

Editor THE AUTOMOBILE:

[881.]—Will you kindly let me know at your earliest convenience in which issue of your journal I can find your solution for soldering aluminum? And oblige,

C. L. SCHAEFER.

378 East 161st street, New York City.

A solder which will work well with aluminum is: Tin, 10 parts; cadmium, 10 parts; zinc, 10 parts; lead, 1 part. The pieces to be soldered must be thoroughly cleansed and then put into a bath of strong solution of hyposulphate of soda for about two hours before soldering. Another solder may be formed with 80 per cent. tin to 20 per cent. zinc, using a flux composed of 80 parts stearic acid, 10 parts chloride of zinc and 10 parts chloride of tin. An announcement of a specially prepared aluminum solder appearing on advertisement page 80 of our issue of August 22 may be of interest to you.

ADVANTAGES OF INCREASING WHEELBASE.

Editor THE AUTOMOBILE:

[882.]—We would be pleased to have you tell us through your columns regarding a long and short wheelbase. Suppose you had two automobiles, each equipped with the same machinery, such as engine, transmission, and so forth, but one was of 100-inch wheelbase and the other was of 96-inch wheel base, the weight of both machines being the same. Now the question arises, which machine pulls the hardest?

In other words, does a long wheelbase require more horsepower than a short one, considering horsepower and weight the same in both cases?

CRESCENT AUTO & SUPPLY CO.

St. Louis, Mo.

Less horsepower is required to move the same weight of car over uneven surfaces when distributed over a long wheelbase than a short one, for obvious reasons. When striking an obstruction, a car with a short wheelbase is usually lifted bodily in the air, which causes it to lose a great deal of its momentum and this lost energy must be made up before the car can attain the same speed as it was running at before striking the obstruction. It is as if the short wheelbase car tried to batter down everything in its way while the long wheelbase car glides over it easily by reason of the interval elapsing between the time the front and rear wheels strike the same point. Such a slight difference as you mention would hardly be appreciable, and it could not properly be stated that one machine pulled harder than the other; merely that the long wheelbase machine would be able to make much better speed, particularly over rough roads, with the same amount of power as employed in the shorter car.

"AUTOMOBILE" SIGNIFIES "SELF-MOVABLE."

Editor THE AUTOMOBILE:

[883.]—Kindly advise me in the next number of "The Automobile" the meaning of the word "automobile" and its origin. Does it cover all classes of road vehicles, propelled by a motor or engine?

By answering the above, you will greatly oblige,

New Durham, N. J.

R. DUNCAN HUNTER.

Probably you have searched in vain for the word automobile in a standard dictionary of the English language. To get the word's correct dictionary value one must turn to a French volume, for the word, like the thing it represents, comes to us from across the Atlantic. Primarily the word is an adjective, there never being any record of its use as a noun until the last few years. Its derivation is from the Greek *auto*, meaning self, and the Latin *mobilis*, movable. When the motor vehicle first appeared it was called in France a *voiture automobile*, or an automobile carriage. In time the word *voiture* ceased to be used in connection with automobile, the adjective passing into the French language, and later into the English, as a substantive. Etymologically to speak of a vehicle as an automobile is incorrect; we should say an "automobile vehicle," carriage, wagon, etc. Few of us, however, will be willing to employ the double term of the etymologist when the idea can be so well represented in a single word. "Automobile" may be taken to apply to all classes of self-moving vehicles of a great many different types.

WHY NOT SLEEP IN THE TONNEAU?

Editor THE AUTOMOBILE:

[884.]—Will you satisfy my curiosity and desire for information on the following subject?

Being an enthusiastic believer and user of automobiles and much interested in touring, even under the adverse conditions encountered in many parts of the South in the way of sandy roads, I have often thought why, in the construction of touring cars, couldn't the back of the front seat be securely hinged so as to swing backwards and down, thereby with a few fittings quickly converting one's car into an "Impromptu Pullman sleeper" for the accommodation of at least two persons? Such sleeping facilities while on the road would, in many instances, be far preferable to the best that many country houses, and so-called inns, could furnish. Even in in-

clement weather, with the automobile fully equipped with top and an ample curtain protection, two tourists could spend the night within the curtains of the auto far more comfortably than in many camping tents.

I do not know of any cars thus equipped, nor of any reasons that would prevent a car being built in this manner, so am led to write you as above, under your department "Letters Interesting and Instructive." I would be glad to know whether you consider my idea worthy of comment in your paper, and if you think it practicable.

WALTER SPRUNT.

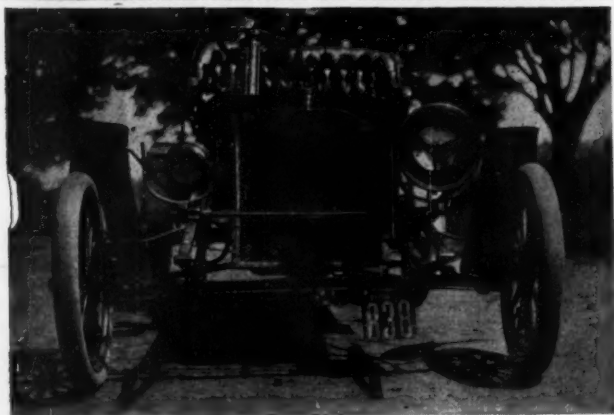
Wilmington, N. C.

This has been done in the case of one or two cars that have been used on long tours, while others have fitted their cars quite elaborately in this respect, one used for a hunting trip having accommodation for four persons. If there were sufficient demand for them, doubtless such bodies would be turned out in quantities, but as it is, recourse must be had to the carriage-maker and the individual ideas of each owner embodied in his creation. The idea is perfectly practical.

ALTERING THE FRONT SPRING SUSPENSION.

Editor THE AUTOMOBILE:

[885.]—The photographs which accompany show how my Ford car looks after I changed the front spring suspension. As a result of the alteration the wheelbase has been increased by fifteen inches, and I can safely assert that the car rides fully fifty per



FRONT AND SIDE VIEWS OF THE SUSPENSION IMPROVEMENT.

cent. easier. Any Philadelphia owners wishing to make a similar change in their cars can write to me, and I will gladly furnish them full particulars, showing them how to improve their cars as I have done.

S. H. CROFT.

Philadelphia, Pa.

SOME QUERIES ON MISCELLANEOUS TOPICS.

Editor THE AUTOMOBILE:

[886.]—Your answers to the following questions will oblige a constant reader:

1. Why could not the spark be advanced automatically; i. e., by a centrifugal governor, and the engine control be by throttle alone? What are designers' objections to this method?

2. What is the cause of the hum in high-class American and foreign cars? I do not mean the noise caused by the chains, but the humming sound which seems to come from the engine.

3. What is meant by "1-8 inch female thread?"

C. M.

Chicago, Ill.

1. This has been done in a number of cases and probably there are still cars built that embody this feature. So far as we know, there is no objection to it, either theoretically or in practice. It is simply one of those superfluities that introduce needless complication, particularly as very few cars nowadays are fitted with a governor of any kind. Moreover, with the magneto, which is daily becoming more and more prevalent as a means of ignition on both American and foreign cars, there is very little need of altering the position of the spark lever, except to start.

2. The high speed at which the flywheel turns is doubtless responsible for the hum you mention, although the fan is also a contributing factor. Any body revolving at a very rapid rate will give rise to it and it is particularly noticeable with electric motors.

3. The dimension, " $\frac{1}{8}$ in.," refers to the diameter of the tube, pipe or other part in question, while "female thread" means that it is threaded internally instead of externally.

THE GREASE THAT TRACY USED IN 1905.

Editor THE AUTOMOBILE:

[887.]—Some time during the fall months of 1905 I purchased a ten-pound can of gear case compound for lubricating sliding gears. I found it very good, and want more of the same stuff. I don't remember where I got it or what the name of it was. Can you help me out? I saw the "ad" for the stuff in "The Automobile," and I remember the "ad" said that the compound had been used by Tracy in the gear case of the Locomobile in the 1905 Vanderbilt race. I want more of this lubricant, and want it bad, and if you can give me any information through your "Letters Interesting and Instructive," you would greatly accommodate, C. L. WEIMER.

Lebanon, Pa.

Mr. Tracy advises us that so far as his memory serves him he used Albany grease on his Locomobile racer in the 1905 Vanderbilt Cup race. The address of the makers of this lubricating compound will be found in our advertising pages, though it is probably kept on sale by all supply stores and garages.

BOTH MAGNETO AND CARBURETER AT FAULT.

Editor THE AUTOMOBILE:

[888.]—Probably you will recall my writing of a very annoying form of trouble that I experienced with my car for some time last season, and which I tried in vain to remedy, even to the extent of calling several alleged automobile experts to my aid. These gentlemen are more or less well known, so I will refrain from mentioning any names. They came, saw and looked very wise. One brought an assistant with him and spent two days in tearing the car down and putting it together again, and then departed. The other contented himself with making sundry suggestions, running the car about and looking wise, in the course of which he almost succeeded in making mince meat of a bob-sled full of children who were coasting down a hill. He continued to look wise, but likewise departed without having left anything of definite value behind in the way of a diagnosis, though I will add that neither of these experts has ever sent me a bill of expenses for his valuable services.

Later on I had an old friend who is an automobile engineer come to look at the car, and he determined almost immediately that the ignition was at fault. The four-volt storage battery with the jump spark had never given satisfactory service, as compared with the make and break, and he found that on setting the magneto gear three teeth ahead a very much better spark was obtained. He then devoted considerable time to adjusting the spring on the auxiliary air intake of the carbureter, accomplishing this by running the engine slowly and holding his hand over the inlet, gradually removing it so as to give more or less air; then speeding the engine up and doing the same thing. For instance, if he found the engine ran better with his hand away from the inlet, it indicated that more air was required, and the spring was adjusted accordingly. He finally got the car so that it ran very well except that it "bucked" when the throttle was opened suddenly.

He advised me to try a Schebler carbureter, stating that his company had had excellent results with it, and I finally bought a 1-inch size and put it on. Have had absolutely no trouble since, the car running as well as it ever did. The fault would seem to have lain, therefore, in the fact that the engine did not get a hot enough spark from the make and break; and secondly, that it did not have the proper mixture. My friend examined the valves carefully and found that they were set correctly, so that the only place to look for the trouble lay in the ignition and carbureter, both of which were found to require adjustment.

W. E. I.

Passaic, N. J.

Autoing Across New Mexico's Plains

By
C. W. Fletcher

WHERE THE ROAD ACROSS THE "LLANO" RUNS STRAIGHT AS THE PROVERBIAL CHALK LINE.

ROSWELL, N. M., Aug. 22.—Persons living within a radius of 200 miles of great cities, where hard roads, interurban trolley lines, and fast passenger train service are commonplace incidents of everyday life, can scarce appreciate just what the automobile is doing in the upbuilding of the great Southwest country. In the East one is accustomed to associate the auto more often with social life than with business, but how it is answering the call of duty in the sterner and less complex civilization of New Mexico would be an eye-opener to readers of *THE AUTOMOBILE*, could they but see for themselves.

Away down on the semi-arid, mesquite-covered plains of New Mexico the whir of the motor startles the antelope and the prairie dog. Its coming, however, is the result of no chance or accident. This is a daily event—the flight of the Roswell motor stage—and you may easily picture the contrast to the days of the overland stage and the pony express. Across this dry, barren stretch of country from Roswell to Torrance, two thriving towns in the irrigated section, is 111 miles. The automobile stage makes the round trip in 11 hours and 30 minutes, actual running time. J. F. Stockard, Mayor of Roswell, was a believer in automobiles. He conceived the idea of establishing the stage line running between the two towns, but he was told that such a thing would be impracticable. How often has that advice proved untrustworthy where the automobile was a factor!

But here was the situation that confronted Mayor Stockard. The main line of the Atchison, Topeka and Santa Fe system goes over the Raton mountain range 150 miles north of Roswell. To go from any point on the main line of the Santa Fe to any point in the Pecos valley of New Mexico one must journey as far east as Trinidad, then cross the plains to Amarillo, Tex., and then go southwest on the Pecos valley line. It is a day's journey from Amarillo to Roswell. Mr. Stockard's motor stage line bisects this big railroad triangle. Its terminus is Torrance, where it connects with the Santa Fe Central line. It reduces the time necessary to make the journey from Roswell to Albuquerque more than twenty-four hours. A corresponding reduction is made in the time required to make the journey to other points in the territory.

"Our line was started in November, 1905," Mayor Stockard said a few days ago. "We made our own roads with the use of a drag—a plow-like arrangement that cut out a path twelve inches wide for the wheels, leaving an unbroken strip of ground in the middle of the road. We are now oper-

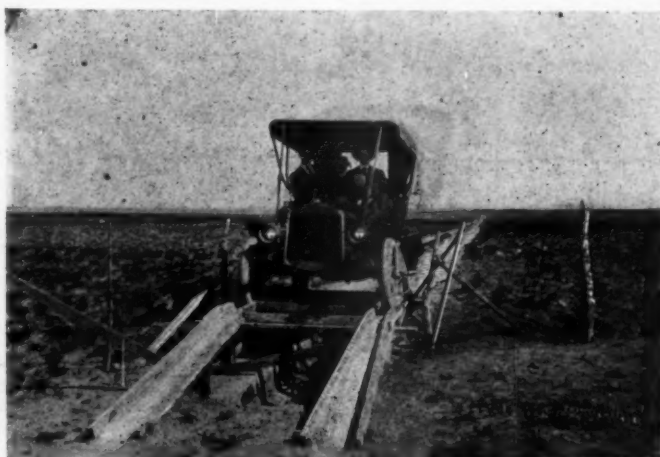
ating six cars—four Buicks, one Winton, and one car we manufactured ourselves. In May this year we handled 247 passengers and in April 184. The average cost of operating a car over the line is \$12 per round trip. The fastest time we have ever made from Roswell to Torrance, a distance of 111 miles, is 3 hours and 45 minutes."

At the suburbs of Roswell the chauffeur turns abruptly from the public road. The big machine goes slowly over a curiously constructed fence-row crossing. It is built on the plans of a railroad cattle-guard, except that where the steel rails are laid on the railroad crossing there are on Mr. Stockard's unique crossing grooved runways, upon which the wheels of the automobile run in making the crossing. Across the sand-swept, mesquite-covered lands, which stretch away for an infinite distance, Mr. Stockard has laid out the road as "straight as the crow flies." There are few curves and but few depressions to bridge. One of the largest is seventy-five feet across. It is spanned by a bridge built by Mr. Stockard. It, too, is something new in the automobile bridge line, and was illustrated and described in *THE AUTOMOBILE*, August 2, 1906, page 137.

Fifty-four miles from Roswell is the half-way house, where Mr. Stockard maintains a free hotel for his patrons. The ride is for the most part across a desolate, dreary plain, here and there a tract of ground in cultivation, or perhaps a ranch house to relieve the monotony of sand and mesquite brush. It's a cool, invigorating ride, however, except where the sun beats in on unprotected face and hands.

It's only after you've made the trip over the line and seen the country that the significance and the utility of the automobile as a means of transportation come home to you. Comfortably seated in the tonneau of one of the cars, you may figure on the schedule with the same assurance that the passenger on the fast railroad train from New York to Boston enjoys. A car operated in this country seems to catch something of the spirit and atmosphere of semi-desert land—if that were possible. At any rate, these same engines whir and thump over the trail in an unflinching manner, day after day, the year around. Ask a denizen of the Pecos valley country about the automobile, and ten to one he'll reply, "Ever ride on the Roswell stage?"

Next time you go auto riding through the park, remember what the automobile is doing 'way down in New Mexico, and rejoice that you are an automobilist.



BRIDGES THAT SPAN THE WIRE FENCE ROWS.



STEAM_RACER'S STARTLING CONCLUSION OF THE 1907 ORMOND-DAYTONA MEET.

TWELVE months after any important automobile race even the most diligent search fails to account for all the machines which aroused the enthusiasm of the public by their mighty bursts of speed. There is always a certain proportion of dead and vanquished, diminishing considerably in recent years, and a number which sneak away to the factory never again to breathe the pure air of the highways. Even those that finish the public test in perfect health and condition are forgotten of the public in a few short weeks, and are frequently strangers to their maker, hard pressed by more modern problems, at the end of a few months. Rich enthusiasts snap up the victors and hie away with them to distant parts of the world; some are dismantled, parts being used for building later machines, and some lie idly around the factory, pointed out to an occasional visitor as the machine which did such and such a record.

The chief French factories could, unitedly, produce a small battalion of discarded racers of every conceivable nature, some of them fit for service, others a mass of junk. Renault Frères, for instance, make a point of not selling their racers, and in one corner of the Billancourt factory can be found the machine with which Szisz captured the Grand Prix, the trio which carried the firm's colors in the Gordon Bennett of the preceding year, and this year's team built specially for the Grand Prix.

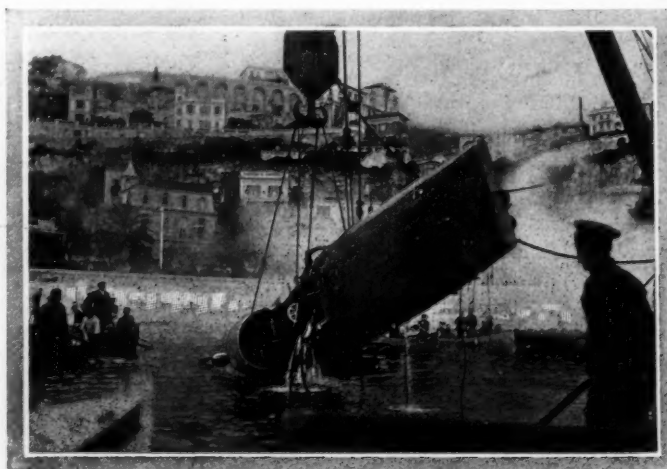
Théry's Flyer Now Carries a Russian Potentate.

Where is the powerful, regular Richard-Brasier with which Théry astounded the world by winning four successive contests against fearful odds? For a time she was on exhibition in the firm's store on the Avenue de la Grande-Armée. But even a Gordon Bennett winner is only a seven days' wonder, and the blue monster was withdrawn to make place for a more brilliantly-polished specimen. A letter from Rome, under the signature of the Count Soldatenkow of the Russian Embassy, indicates that he is the present owner of the racer, that he has just used it for a long journey from Paris to Lyons and Monte-Carlo, Aix-les-Bains, the crowded Corniche, dusty Genoa, and the still dustier Italian roads to Rome. A crowded bridge and rather too much speed resulted in the demolition of a wall and the Gordon Bennett radiator. The accident did not prevent the journey being continued and a record obtained at the Verona meeting. One of the companion engines is reported to have been used in the

famous *Trefle à Quatre* motor boat, which took fire and sank in Monaco bay in 1905. When brought to the surface the hull was found to be ruined, but the engines were none the worse for their fire and water test. Some time later the motor was sold, but even the Brasier people have lost all trace of it. Barillier's Brasier Grand Prix racer, which figured on the Sarthe circuit last year, can now be found in Harry Payne Whitney's garage on Long Island, or on the neighboring roads, where it is doing service as a runabout. Other Brasier racers are doing daily service in Austria, Russia and France, it always being the policy of the Brasier firm to sell their machines immediately after the race in which they took part.

England Took Darracq's Masterpiece to Its Leafy Highways.

The eight-cylinder Darracq, the fastest gasoline car in the world, is of too recent fame to cause any difficulty in searching for it. After Heméry had driven it in France and Florida, it went back to the factory, and was later sold to Lee Guinness, the British millionaire brewer, who takes it out for an airing in some hill climb or kilometer test from time to time. We believe that it is not true that he uses it as a week-end runabout. British ideas of speed on the national hedged-in highways are somewhat conservative. The Darracq racer with which Heméry secured the Vanderbilt Cup for France for the second time is now doing runabout service with S. B. Stevens, of Rome, N. Y. Wagner's Vanderbilt Cup winner was modified to suit the conditions of the German Emperor's Cup race and has competed in several European races this year. Frequently a prominent racer is called upon to submerge its identity in the new season's product, manu-



RESCUING A BRASIER RACER FROM A WATERY GRAVE.

facturers finding it more profitable to perfect some defective organ or strengthen some weak point than to build an entirely new model.

Some Doings of America's Foreign Legion.

In the last Gordon Bennett race on the Auvergne circuit, America had three representatives, a couple of Pope Toledos and Joe Tracy's Locomobile. Herbert Lytle's machine, which had the honor of being the first to officially finish in any European international contest, was driven by Dingley in the Vanderbilt race of the same year; later it was put on a runabout chassis and is now ending out its days about the factory. Dingley's Pope-Toledo Gordon Bennett racer has had a more varied career. After its return from France it was converted into a track racer, figured in a number of local events, and appeared nightly on the stage of the Broadway Theatre in "The Vanderbilt Cup." Lytle's 1906 six-cylinder Vanderbilt racer has been condemned to the more unemotional work of driving a motor boat in New Jersey. Tracy's 1905 Gordon Bennett Loco is still in existence, though parts of it have been used in the construction of the Locomobile Company's 1906 machines. It is, however, in such a condition that it could be put into shape for running in a very short time. The two 1906 Locomobile Vanderbilt racers have been visiting shows in various parts of the country. One of them was used by Mr. Tracy as a runabout from the time of the race until January last. Their racing days are not yet over, for should there be another Vanderbilt race both machines would be put into commission for the event.

America's Irish Gordon Bennett racers have not had a long life of usefulness. The engine of the Peerless, which E. P. Moore drove on the Emerald Isle, was placed in the Green Dragon No. 1 and driven in a number of track events by Barney Oldfield. At the St. Louis meet of August, 1904, Oldfield, as will be remembered, crashed into the fence with such disastrous results that it was not thought worth while to reconstruct the flyer. The Winton machines driven by Alexander Winton and Percy Owen in the Irish event had an even shorter career, being sent to the factory after the race and never leaving it.

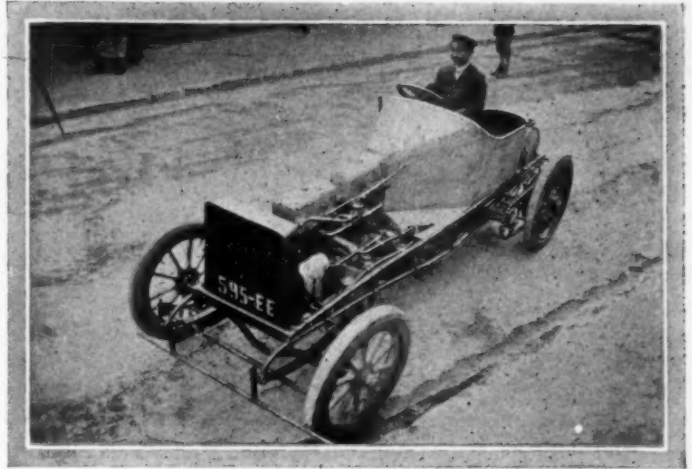
Henry Ford's "999" a Pensioner in California.

"999," which once held a world's record, and often fascinated the public by its remarkable speed, is vegetating in Los Angeles or Santa Barbara, Cal., in the hands of some private owner whose name cannot be found on any records. When Tom Cooper sold "999" it passed entirely out of the hands of the Ford company. "999" was remodeled, but has not been credited with any sensational performances since rebuilding, the reason being, says Mr. Ford, that the weight of the car was nearly doubled in the improving process.

When the Stanley steamer hurled itself to destruction in the closing act of the Ormond-Daytona meet of the present year the grande finale was reached in short-distance automobile sprints. In its own special field the Stanley was king; second after second had been stripped off world's records; gasoline admitting defeat on mile and kilometer courses. Marriott opened out the powerful engine for a final sprint, the fastest the world has ever seen, in the opinion of all eye-witnesses. It proved to be the last, and when the wreckage had been gathered up Stanley declared that there would be no successor.

Marine and Aerial Service for Panhard Engines.

A diligent search fails to record many traces of the big fleet of Panhard racers, which ever since the introduction of automobiling have shown themselves worthy competitors. Panhard-Levassor's of early 1892 are still to be found as cherished relics in certain corners of Paris, but racing models of the machines most famous for their longevity are rare. The world's motor boat record, it is interesting to note, was secured this spring at Monaco by a couple of motors which commenced their road career on two Grand Prix 1907 racing machines. The automobile which won



OLD GOBRON WHICH WILL NOT LEAVE RACING RANKS.

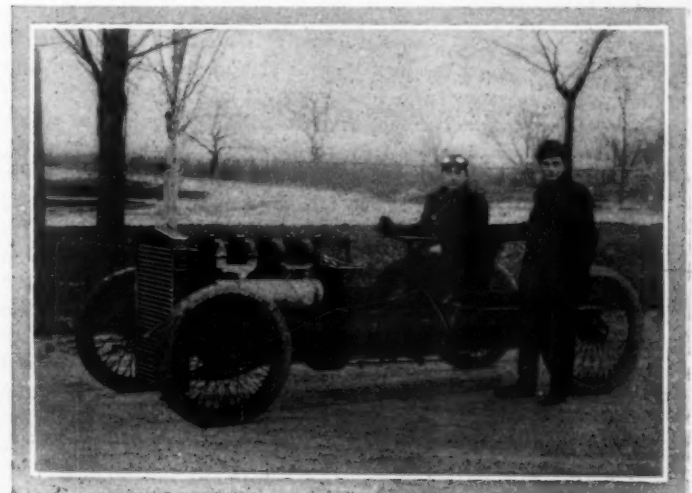
the Paris-Bordeaux-Paris race of June, 1895, is still in existence in Paris. A Panhard "racer" of the middle ages of 1892 is also in the possession of a satisfied Parisian. Its public appearances are now confined to state occasions. But a few days ago France's first military steerable balloon sailed out to Rambouillet to pay an official morning visit to President Fallieres, waiting in the grounds until the return was ordered with the docility of a well-groomed automobile. It was a 70-horsepower Panhard motor, formerly on a racing car, which drove the first unit of the nation's aerial fighting fleet.

Gobron Five-Year-Old Still Running in Public.

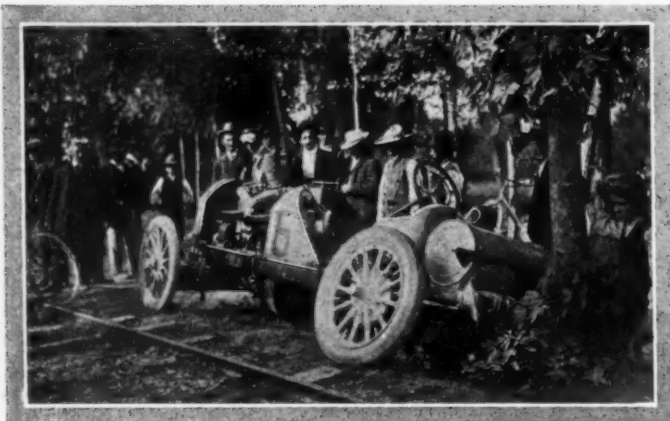
A good example of long racing service is to be found in the Gobron-Brillié which ran in this year's Grand Prix. The machine figured in the Château Thierry hill climb of 1903, took part in the last Gordon Bennett, in the 1906 Grand Prix, and, despite its four years' active service, was considered capable of competing with machines of the present season without any material changes.

The Packard Grey Wolf can equal the French machine for longevity. Produced in 1903, it figured in numerous race meets, sometimes with unrehearsed effects, was sold to E. H. R. Green, of Terrell, Tex., entered in several races, went through a fence and was sold to Seth Miller, of Dallas, Tex., who converted it into a runabout. Latest reports are that it is still in good health and performing regular service.

Mercedes machines, like the successful Brasier racers, have nearly all been sold to private owners. Jenatzy's racer, with which he captured the Gordon Bennett Cup in Ireland in 1903, was destroyed by fire at the Canstatt factory, together with its



VETERAN "999" IN THE HEYDAY OF ITS YOUTH.



A CHECK, BUT NOT FINALITY, IN AN ITALIAN'S CAREER.

team mates. The machine was at that time the property of the late Clarence Gray Dinsmore. One of Mr. Dinsmore's many Mercedes racers was sold to the German Emperor, in whose service it still remains. Probably on a close search many of the earlier racers of the pioneer German firm could be found in private service, a racer of 1900 being a sober tourist of 1907. As the power of racing automobiles has increased it has not been so easy to convert a flyer into a tourist; thus specially built machines for such events as the Grand Prix or Vanderbilt races are obliged to remain in racing ranks.

Fiat racers have not generally done other than speed work. Lancia's Gordon Bennett racer, with which the dashing Italian ran such an exciting contest against Thery's Brasier, finished that memorable day disabled on the brow of a hill in wild Auvergne, while the Frenchmen yelled their victory all night long in the town down in the valley. It was Nazzaro's machine, second in the last Gordon Bennett race, that Chevrolet reduced to a shapeless mass while training on the Vanderbilt course one foggy morning in 1905. The substitute machine which he handled in the race also received rough treatment, but not such as put its life in danger, for it is now in runabout service with Mr. Barron of Boston. All the 1906 Fiats which came here for the Vanderbilt race went back to the factory, among them the one from which Dr. Weillschott took his record flying jump, and have been used to prepare for this year's European races.

Ill Luck Often Shortens Promising Careers.

There is some pathos attached to the C. G. V. which Girardot constructed so carefully and tuned up so conscientiously for the Auvergne race. During the French elimination trials two front tires burst simultaneously on a straight stretch. Girardot was carried off to the hospital apparently a complete wreck, and his machine left by the roadside in no better condition. A strong constitution enabled the man to recover and mechanical skill put the machine in racing trim once more. It was entered for a race; Girardot, on crutches, hobbled up to the starting line to watch his favorite make another rush for glory. The driver was nervous; he raced his engine and threw in his clutch, causing the machine to jump ten yards and fall like a log. Something in the nature of a sob escaped Girardot as he turned around and, with drawn features, shuffled away from the scene of the disaster. The wreck is still at the factory.

No one who saw Christie's front driver after it embraced the telegraph post on Long Island would have imagined that there was any more life in it. But there was. The cylinders were used for the new machine which, after a too brief tuning up on Long Island, was shipped across the Atlantic to join its voice in the international concert on Dieppe's fast circuit. Brighton Beach has since seen a record sprint by the Christie; probably numerous other tracks will be the scene of its wild flights before the 1906 cylinders cease to inhale explosive charges.

THE NEWS FROM TENNESSEE.

CHATTANOOGA, TENN., Aug. 31.—Prospects were never brighter for a flourishing season than they are now for the season of 1908. The roads of Hamilton County have been greatly improved within the last few months, thus giving Chattanooga autoists many miles of perfect roads, in addition to the fine Chickamauga Park and Missionary Ridge boulevards. The livery business is flourishing, as a great many tourists passing through the city desire to see Lookout Mountain, Missionary Ridge and Chickamauga Park.

While the present trouble with the Georgia officers in regard to the strict Catoosa County speed law was at its height many Chattanooga automobile owners did not go into the "Cracker State," but toured north on the beautiful Daisy road, through Daisy, Soddy, Retro, Sail Creek, Graysville and Dayton, a distance of fifty miles, the round trip being a good day's run.

We have six automobile companies in the city at the present writing. The two largest are the Chattanooga Automobile Company, handling the Franklin and Cadillac, and the F. G. Joyce Automobile Company, handling the Buick and Thomas.

The chauffeurs of Chattanooga are organizing the Chattanooga Automobile Chauffeurs' Association, which is expected to benefit the chauffeur and the owner, as it will not admit an unreliable man to the order nor work on a car driven by a man that is not a member of the association. The association will ask garage owners not to allow storage to a car driven by a "scab."

A single-cylinder Cadillac runabout recently surprised Chattanooga autoists by making the ascent of Walden's Ridge, partly a 15 per cent. grade and a distance of nine miles, at noonday with two men, one weighing 200 and the other weighing 140 pounds, in 39 minutes, the best previous time having been made by a large 20-horsepower air-cooled car in 36 minutes. E. W. Forstner, demonstrator for the Chattanooga Automobile Company, agents for the Cadillac, drove the car.

WHAT THE DUST TRIALS BROUGHT OUT.

LONDON, Aug. 29.—A further claim for the public support of Brooklands track has been made by the dust trials held there under the auspices of the Royal Automobile Club. It was only through the possession of a private ground of this nature that such accurate and valuable information could be produced.

With commendable promptitude the judges in the Dust Trials of the R. A. C. have got out their report. In this test a portion of the Brooklands track was covered with a half-inch layer of fine limestone powder and some 150 photographs were taken of the clouds raised when the competing cars ran over this prepared surface at a fixed speed. In the section for makers' cars of standard design the prize of a silver cup has been awarded to F. Coleman's 30-horsepower White. In the second class, for amateurs' cars, a 20-horsepower Stanley steamer was considered least offender. A third section comprised experimental devices, and these will be further examined before the awards are made. Not as much positive data as expected has been obtained from this trial, the only undoubted fact being that high construction with big road clearance effectually lessens the amount of dust raised, a belief supported by the above-mentioned success of the two American cars, which are, of course, much higher built than are British productions.

WHAT THE AUTO MEANS TO A POPULAR RESORT.

As an indication of the influence of the automobile upon the patronage of a well located and popular resort, it is stated that 324 automobiles Sunday last visited the Chateau des Beaux Arts at Huntington, L. I. This ideal resort, conducted by the well-known Bustanoby Brothers, was only opened early in the summer and it is yet to be entirely completed. Other resorts in the vicinity of New York report a gradually increasing number of automobile visitors, but the chateau seems to hold the record.

SEPTEMBER FINDS CLUB LIFE ENERGETIC

A GOOD ROAD AND LEGISLATIVE CONVENTION.

SPRINGFIELD, MASS., Sept. 1.—Arrangements for a convention to be held under the auspices of the Springfield Automobile Club in this city, September 24-25, are being perfected, when good roads and a sane use of them by autoists, and the plan of uniform registration of cars, will be the principal subjects for consideration. Efforts are being made to secure the attendance of delegates from all the automobile clubs in New England, New York, New Jersey and Pennsylvania, and invitations have been sent to the various State highway commissions. Individual owners of automobiles are also invited to attend. The Springfield club hopes to make the convention an annual affair.

The convention will be called together in some large hall to be selected on Tuesday of convention week, when papers will be read by the chairmen of the various State highway commissions, after which there will be open discussion of the papers presented. The matter of uniform legislation will also be considered. Tuesday evening a banquet will be tendered the guests, and on Wednesday the visitors will be shown the city and suburbs in automobiles.

Congressman Gillett has been invited to address the convention on national legislation for automobiles, and other prominent public men will speak on the same subject. Other speakers on special subjects will be William E. McClintock of the Massachusetts State highway commission; Paul D. Sargent, State highway commissioner of Maine; A. W. Dean, State engineer of New Hampshire; J. W. Votey, State highway commissioner of Vermont; John H. Edwards, Rhode Island highway commissioner; John H. MacDonald, State highway commissioner of Connecticut; E. C. Hutchinson, commissioner of public roads of New Jersey; Joseph W. Hunter, State highway commissioner of Pennsylvania; and State Engineer Skene of New York.

The members of the various State highway commissions have all been invited to attend the convention and participate in its deliberations.

ST. LOUIS OWNERS' RELIABILITY RUN.

ST. LOUIS, Sept. 1.—What promises to be the most interesting run of its kind ever attempted in the Mississippi Valley is scheduled for September 21, under the auspices of the Automobile Club of St. Louis, with the title of the First Annual Owners' Reliability Tour. Start will be made at 10 o'clock in the morning on Lindell boulevard in front of the St. Louis club, and the route will be out the boulevard through the most picturesque roads of St. Louis county and over the best highways in a circuit of 86 miles which finishes at the starting point. It is the purpose of the committee to make the run a pleasure tour, so that contestants may be accompanied by members of their families. Professionalism will be eliminated and a commercial contest will be avoided. The prize to the winner will be a beautiful trophy donated by James Hagerman, Jr., who is chairman of the committee of arrangements. Roy F. Britton and Alden H. Little are the other committeemen.

BRIDGEPORT HILL CLIMB POSTPONED TO MAY 30.

BRIDGEPORT, CONN., Aug. 31.—The Automobile Club of Bridgeport has decided to postpone its proposed hill climb scheduled for Labor Day to Decoration Day, May 30, 1908. The reason given for the postponement is that so many of the club members are out of town on their vacations that it will be impossible to handle the matter as satisfactorily as is desired. The last hill climb at Sport Hill on May 30 was a great success, and all energies will be bent in making it a splendid annual event of national import each Decoration Day morning.

ADDITIONAL PRIVILEGES FOR A. C. A. MEMBERS.

NEW YORK, Sept. 2.—The Pequot Casino Association, of New London, Conn., has extended to the members of the Automobile Club of America the privileges of its clubhouse and grounds for the present season. The casino is situated on the west shore of New London harbor, easily accessible by automobile over good roads, is open all the year, with the exception of strictly winter months; has a number of sleeping rooms, a restaurant, and other conveniences. A. C. A. members can avail themselves of the privileges upon the presentation of their club card.

The Long Island Railroad Company has requested that the attention of A. C. A. members be called to the many gates at crossings which have been run into and broken by automobiles, and to the fact that these gates, when down, are always protected at night by a white light hanging thereon.

Owing to the expense of furnishing the jointed staff, A. C. A. members are notified that the price of the small club flag has been increased from \$1.50 to \$2.

Members are warned of additional speed traps at the following places:

New Jersey—Pleasantville, at the western end of the Atlantic City boulevard.

Pennsylvania—On the Trenton to Philadelphia road, on Pennsylvania side, ten miles south of Trenton, in Middletown township, Matamoras; over the Pennsylvania line, near Port Jervis.

New York—Nyack, on main street, in center of town.

Long Island—Amityville, in village limits; Cold Spring Harbor, in village limits.

INDIANAPOLIS CLUBS WILL NOT MERGE.

INDIANAPOLIS, Sept. 1.—The effort made a short time ago to effect a consolidation of the Automobile Club of Indiana with the Indianapolis Motor Club has fallen through, and the proposition to purchase jointly the property at Broad Ripple is off as far as the automobile club is concerned. A joint committee representing the two clubs visited the place recently and while the motor club committee was in favor of purchasing the property, the auto club representatives failed to see the advantages of a club so near the city for drives, yet too far away for a convenient stopping place. The automobile club at present has very desirable rooms in the Denison Hotel, where lunches are served daily. This location will probably be retained until a building is either built or purchased that will satisfy the demands of the organization.

The annual hill climb of the Automobile Club of Indiana will be held some time during the present month, but the date is not yet fixed. There is some talk also of promoting a 24-hour race.

OHIO'S STATE ORGANIZATION IS ACTIVE.

CLEVELAND, Sept. 1.—That energetic body of automobilists, the Ohio State Automobile Association, which has its headquarters in Cleveland, is making strenuous efforts to increase its membership, with the object of becoming an important factor this winter in securing increased appropriations for good roads and more equitable laws for automobilists from the State legislature. Secretary Hower has been personally working in different cities and towns, with the result that a number of clubs are in process of formation. Many unattached owners are also joining.

JERSEYMEN PLAN ANOTHER ENDURANCE RUN.

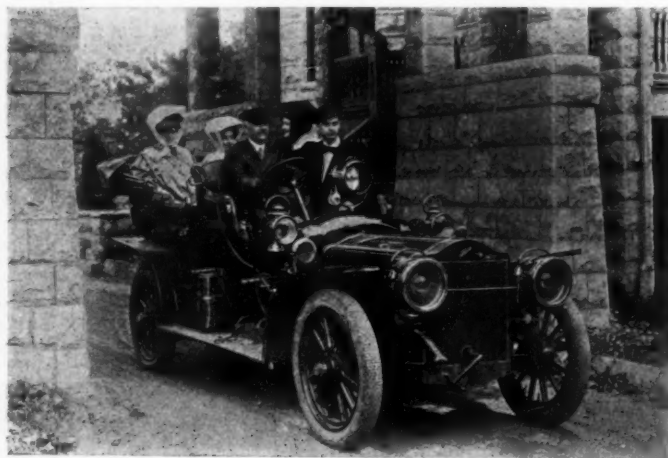
NEWARK, N. J., Sept. 1.—A somewhat similar contest to the three-day endurance run of last spring is contemplated by the New Jersey Automobile and Motor Club for election day, No-

vember 5. Although the matter has not come officially before the club, Secretary H. A. Bonnell is sounding the members on the matter. His idea is an eighteen-hour endurance run, not over the best roads of the State, as was the recent three-day contest, but on poor roads, which would serve to test the cars better. The cars can be started the evening previous to the day of the contest and would be compelled to run all night without stop, finally checking in at noon on election day. If the plan finds favor among the local dealers, it will be brought up for consideration at the next directors' meeting, September 9.

Seventy-two new members have been added to the roster of the club since May, 54 of whom are active members and 18 of whom are associate.

ONE OF MISSOURI'S ENERGETIC CLUBMEN.

SPRINGFIELD, Mo., Aug. 31.—Southwestern Missouri is making splendid progress in advancing automobile interests, largely through the vigor of the officials of the various clubs in this section of the State. The Automobile Club of Springfield has a president in William H. Horine whose energy is proverbial, and largely through his efforts the club has taken the position of



PRESIDENT HORINE AT THE WHEEL OF HIS THOMAS FLYER.

one of the most progressive organizations west of the Mississippi. Now that Missouri has a fairly equitable automobile law on its statute books, every effort will be put forth by autoists in this section for road improvement at the next legislative session.

MILWAUKEE WILL HAVE ORPHANS' DAY, SEPT. 5.

MILWAUKEE, Wis., Sept. 1.—Next Saturday, September 5, the orphans of the Protestant Orphan Asylum, the Catholic Boys' Home and those from St. Vincent and St. Rose's Asylums will be given their annual outing by the Milwaukee Automobile Club and the Automobile Trade Association. A ride about town will be taken and dinner will be served at Washington Park.

NORRISTOWNERS WILL HAVE NEW CLUBHOUSE.

NORRISTOWN, Pa., Sept. 2.—The Norristown Automobile Club has decided to build a \$7,500 clubhouse on a plot of ground recently purchased on DeKalb street, in Norristown township, just outside the borough limits. Plans are being prepared for a brick building one and a half stories in height, with a 40-foot front and large veranda. The lot is 200 by 250 feet.

IOWANS HAVE A MUSK MELON FEAST.

DES MOINES, Ia., Aug. 31.—The annual midsummer picnic of the Iowa Automobile Club was held last Sunday at the Prouty farm, a charming spot eight miles from this city. The club members and their friends were the guests of Cheney Prouty, who furnished musk melons galore, fresh from the vines.

THE AUTOMOBILE CALENDAR. AMERICAN.

Shows and Meetings.

- Oct. 24-31.....—New York City, Grand Central Palace, Eighth Annual Automobile Show, Automobile Club of America and the American Motor Car Manufacturers' Association.
- Nov. 2-9.....—New York City, Madison Square Garden, Eighth Annual Automobile Show, Association of Licensed Automobile Manufacturers.
- Nov. 29-Dec. 6.—Chicago, Casino Garden, Second Annual Auto Parts Show. A. M. Andrews, secretary, 184 La Salle street.
- Nov. 30-Dec. 7.—Chicago, Coliseum and First Regt. Armory, Eighth Annual National Automobile Show, and First Annual Commercial Vehicle Show, National Association of Automobile Manufacturers.
- Dec. 14-21.....—St. Louis, Mo., New Coliseum, Second Annual Auto Show, St. Louis Automobile Manufacturers' and Dealers' Association.
- Dec. 28-Jan. 4.—New York City, Madison Square Garden, Importers' Salon. C. R. Mabley, secretary and manager.
- April 6-11.....—Buffalo, Convention Hall, Motor Boat and Sportsman's Show. D. H. Lewis, manager.

Races, Hill-Climbs, etc.

- Sept. 6-7.....—New York City, Morris Park Track, 24-hour Race Meet. Morris Park Motordrome Club, office, Times Building.
- Sept. 7.....—Hartford, Conn., Hill Climb, under the auspices of the Automobile Club of Hartford.
- Sept. 7.....—Minneapolis, Minn., State Fair Race Meet of the Minnesota State Automobile Association.
- Sept. 9-10.....—Pittsburg, Pa., Brunot's Island Track, Race Meet, Automobile Club of Pittsburg.
- Sept. 10-12.....—Cleveland, Three-day Utility Run for Pleasure and Commercial Automobiles of Classes, Cleveland Automobile Club.
- Sept. 14.....—Philadelphia, Point Breeze Track, Quaker City Motor Club.
- Sept. 14.....—Jamestown (Va.) Exposition, Aeroplane Contest for "Scientific American" prize.
- Sept. 14.....—Albany, N. Y., 95-mile Road Race, under the auspices of the Albany Automobile Club.
- Sept. 20-21.....—Milwaukee, Wis., State Fair Grounds Track, 24-hour Race, Milwaukee Automobile Club and Milwaukee Dealers' Association.
- Sept. 21.....—Harrisburg, Pa., Middletown Track, Race Meet, Motor Club of Harrisburg.
- Sept. 22-24.....—Newark, N. J., Olympic Park Track, Essex County Fair Automobile Races.
- Sept. 30-Oct. 5.—Trenton, N. J., Inter-State Fair Automobile Races, Includes 24-hour Event.
- Oct. 21.....—St. Louis, Mo., International Aerial Race of the Gordon Bennett Prize, Aero Club of America.

FOREIGN.

Shows.

- Aug. 1-Sept. 30.—Holland, Amsterdam, International Exhibition of Motors and Machines, Palace of Industry.
- Sept. 28-Oct. 7.—Denmark, Copenhagen International Auto Show.
- Nov. 11-23.....—London, Olympia Motor Show.
- Nov. 12-Dec. 1.—Paris, Exposition Decennale de l'Automobile, Grand Palais, Esplanade des Invalides, Automobile Club of France.
- Dec. 5-22.....—Berlin, Germany, Automobile Show.
- Jan. 18-Feb. 2.—Turin, Italy, Fifth International Automobile Exposition, Palace of Fine Arts, Valentino Park, Automobile Club of Turin.

Races, Hill-Climbs, etc.

- Sept. 15.....—Austria, Semmering Hill Climb, Austrian Automobile Club.
- Sept. 15.....—France, Chateau-Thierry Hill Climb.
- Oct. 1-15.....—Paris, Electric Vehicle Competition, Automobile Club of France.
- Oct. 20.....—France, Gaillon Hill Climb.
- Nov. 1-15.....—France, Voiturette Contest near Paris.
- May 16, 1908....—Sicily, Targa Florio, Automobile Club of Italy.
- June 20-July 5, 1908.—Grand Prix, Dieppe Circuit, Automobile Club of France. (Exact date to be announced.)
- July 14, 1908....—Paris to London, Aerial Race.

CLEVELAND CONTEST'S INTERESTING RULES

A SEALED bonnet and reliability contest, an electric automobile efficiency contest, and a commercial motor vehicle utility contest are planned by the Cleveland Automobile Club for September 10, 11 and 12. The three competitions will start from the club rooms at the Hollender Hotel, Cleveland, at 8 A.M., Tuesday, September 10, and continue on the two following days. Detailed schedule of the run will be given to each entrant at the start of the test. The Contest Committee in charge of the three events consists of Geo. H. Bowler, Walter C. Baker, H. M. Adams, Chas. Mears, Fred J. Baird. Official regulations for the sealed bonnet and reliability contest are as follows:

CLASSIFICATION.—Entrants will be run in one class and must carry at least three passengers, unless seating capacity of the car is for a less number.

ENTRIES shall be made on special blanks furnished by the Cleveland Automobile Club. Each entry blank shall be accompanied by an entry fee of \$10.00, currency or check; if check, made payable to the Cleveland Automobile Club. The time for receiving entries expires on Saturday, September 7, at 12 P. M. Cars entering after September 7 (midnight) until Monday, September 9 (midnight), must pay an entry fee of \$20.00. A separate entry blank is needed for each car. Entry blanks with entrance fees must be mailed or delivered to Geo. H. Bowler, care of the Cleveland Automobile Club, Cleveland. The contest committee reserves the right to refuse any entry. No entry fee refunded unless entry is rejected. Cars will be started at intervals of two minutes, the order of start being according to the contestant's entry number.

ENTRANTS' CLASSIFICATIONS.—The entrants may or may not drive and a change of drivers will be permitted any place on the course, all drivers being passengers in car continually from start to finish. Cars entered must from start to finish of test be of standard models, equipped according to catalogue specifications. No advertising sign or other indications of the maker's name, further than the name plate or such lettering as may be painted on each car, shall be displayed from the car any time during the test. Decision on this point to be by starter.

PENALIZATION.—The winner will be that car having the least penalization according to the following schedule: Each stop of motor, except where permitted by instructions on route card, 25 points. Breaking bonnet seal, 50 points each time. For each minute or fraction thereof spent in repair, adjustment, or replacement on car from start to finish, 5 points. Contestants will be allowed without penalization to fill oil tanks and gasoline tanks and to turn on or off the lubricator, but make no lubricator adjustments. Five points per minute or fraction thereof for taking on water.

SEALING OF CARS.—Cars must present themselves at the Cleveland Automobile Club one hour before their scheduled time to start so that seals may be affixed to the bonnet and coil box. Cars with oilers under the bonnet may make provision to fill the oilers without taking off the bonnet. Cars must regularly carry mud aprons and tampering with motors from beneath the frame or through the mud apron or bonnet will mean a penalization equal to that of breaking the bonnet seal. Cars with motors not beneath a forward bonnet must provide themselves with mud aprons of metal or cloth entirely enclosing the underside of the motor so that suitable seals can be attached.

SCHEDULE.—The contest committee will furnish each car a schedule not sooner than thirty minutes before starting each morning. The schedule will fix the exact minute at which each car in each class may pass a checking station without penalization, the schedule for which will not exceed operating the cars at faster than the legal speed. Cars will not be permitted to make up time and penalty will be based upon run between each two checking stations.

RUNNING REGULATIONS.—Each car must carry prominently displayed from sides its official number throughout the test. Entrants must conform to the laws and ordinances of the road. Arrest during tour for violation of speed laws or traffic regulations may, at the discretion of the referee, result in disqualification.

CHECKING STATIONS.—The number and location of checking stations will not be known to contestants until the schedule is received before starting each morning. At each checking station every car must stop, the observer handing his running card to the

checker, who will mark the time upon it and return it to the observer, after which the car must immediately resume its journey. Entrants will not be permitted to enter any checking stations before the time for their arrival upon the running card, and are given ten minutes leeway after the time marked upon running card, penalization occurring only after expiration of said ten minutes leeway.

OBSERVERS.—Each entrant must furnish one man to act as observer, and said observer will be transferred to a different car each day. Observers must remain through the entire day's run with the car to which they are assigned. They will receive a running card and must see to it that the starting time is marked upon it at the start and that the time is marked upon it also at each checking station and also at the finish. Observers must record each incident during the tour that receives penalization, marking the penalization points. At end of run he must sign his card and hand it to a clerk at finishing point.

AWARDS.—No award will be offered further than a certificate showing the record made by the car during the contest.

PROTESTS.—All protests as to entries must be made to the referee before the start. All other protests should be made during the run or before noon next day. All protests must be made in writing to the referee and each accompanied by five dollars, which will be returned in case the protest is sustained. Accompanying a protest must be a written statement of the conditions causing the protest, and protestees must procure witnesses or others possessing knowledge relative to the protest before noon next day before the referee.

ACCIDENT LIABILITY.—Every entrant must become acquainted with these rules and on entering agrees to abide by them; agrees to accept the official records of the contest committee, and authorizes the committee to publish them in any manner that it decides upon. Entrants shall hold the Cleveland Automobile Club harmless and indemnify them against all losses or damage resulting directly or indirectly or growing out of the operation, management or control of the car entered by them from the time of entrance until the completion of the contest. The Cleveland Automobile Club shall not be responsible for any damage that may be done to any car, passenger or contents, during the contest, or for the theft of any car, accessory or content; the car at all times subsequent to the start and until the end of the contest being at the entrant's risk.

REGULATIONS.—All entrants may advertise the performance of their cars in any manner they see fit, but in case any entrant advertises contrary to the findings of the contest committee, they will be barred from future contests conducted by the Cleveland Automobile Club until such time as decided upon by said organization.

The contest committee reserves the right to alter, amend, repeal or add to these rules up to the start of the tour as it may, in its judgment, deem expedient.

For the electric automobile efficiency contest the following special regulations apply, all other matters not herein mentioned being as in the sealed bonnet test:

CLASSIFICATION.—Entrants will be all run in one class.

CONDITIONS OF RUN.—All cars must carry at least two passengers, one to be an observer selected by the committee. Each car must make a run of at least 40 miles on one charge. The batteries must be fully charged at the end of each run, and an accurate record will be kept of the watt-hours necessary for such charge. The running weight (i. e., with passengers), will be used to determine the watt-hours per ton mile at the average speed made during the run, determined from time taken at start and finish. These results will be reduced to a speed of 12 miles per hour, on the basis of the watt-hours being proportional to the square of the speed. Neglecting the weight and under the same proportion the watt-hours per passenger mile will be determined. These results will be used to determine the efficiency. Cars must average at least 10 miles per hour, and must not exceed 15 miles per hour. An average of less or more than above specified will disqualify a car. There will be no restrictions to the number or size of cells. There must be specified on each entry blank for each car the make of battery which the car will use in the contest, capacity of same and cells in same.

CHECKING STATIONS.—The number and location of checking stations will not be known to contestants until the schedule is received before starting each morning. At each checking station

every car must stop, the observer handing his running card to the checker, who will mark the time upon it and return it to the observer, after which the car must immediately resume its journey. Entrants will not be permitted to enter any checking stations before the time for their arrival upon the running card, and are given ten minutes leeway after the time marked upon running card, penalization occurring only after expiration of said ten minutes leeway.

The features in which the regulations of the commercial motor vehicle contest differs from the two others are:

CLASSIFICATION.—Entrants will be divided into two classes, as follows: Class 1—Cars listed to carry loads up to and including one ton. Class 2—Cars carrying more than one ton. This classification will be arranged to practically divide commercial vehicles into delivery wagon and truck classes, and will be subject to such changes as the character of the entries may suggest.

PENALIZATION.—The winner in each class will be that car having the least penalization, according to the following schedule:

Five points for each minute or fraction thereof during which the car is stopped for any adjustments whatsoever. Ten points for each minute or fraction thereof late in reaching a checking station or control. Five points for each caution received from those in authority for infringement against the traffic regulations of the streets of the city of Cleveland. Any car exceeding the city speed limits will be disqualified at once. For each repair part or replacement to the car, a penalty of 5 points for each dollar in value for same will be deducted. This to apply whether done upon the road or during the night storage of the car.

RUNNING REGULATIONS same as in the two previous contests, with the addition that all cars must throughout the run carry such load as the contest committee may authorize, and such load will not be more than the catalogue capacity of the car.

Large users of commercial vehicles, including some of the express companies and the United States Postoffice Department, have signified their intentions of having representatives present to watch the contest.

WHAT DOES IT COST TO OWN AN AUTOMOBILE?

SO much has been said and written regarding the extravagant outlay required to maintain an automobile that doubtless many have been deterred from investing solely on that account, and it is a matter of common knowledge that the prospective purchaser's chief concern is, What is it going to cost to keep the machine? In view of this state of affairs, the following summary of the experiences of a great many owners in all parts of the country will be found of considerable interest:

How long will an automobile last?

What does it cost to operate it?

How many miles will it run on a gallon of gasoline?

How long will the tires wear?

are probably the four important factors in the life of an automobile. In some cases an automobile in the hands of a competent driver will give a great deal more satisfaction, at a minimum cost, as compared to the same car in the hands of a less experienced man.

To determine the average cost of maintaining and operating an automobile, an enterprising manufacturer has just compiled statistics showing that with judicious handling and the ordinary care that should be accorded an automobile the amount to support a machine is not nearly as great as most people believe. The Cadillac Company determined recently to discover the cost. It sent invitations through the newspapers throughout the country and to owners of single-cylinder Cadillacs, asking them for sworn statements as to the total expense incurred in the maintenance of their cars. Of those who responded hundreds were willing to make statements of the approximate cost of running their cars, yet none of these was used. Only the actual cost, sworn before a notary public and witnesses, were accepted. One hundred and sixty-four statements were received, coming from thirty different States, which show records of cars that have been used on all kinds of roads and under all sorts of conditions. From the data received the following statistics were compiled: The mileage gotten out of the cars varied considerably, ranging from 850 to 32,000. Many of the affidavits showed a mileage of over 20,000 and nearly 50 per cent. had gotten over 10,000 miles out of their cars. The total combined made over 1,500,000 miles, or, to be exact, 1,555,427, the average of this being 9,661 miles per car.

The gasoline consumption afforded great interest. One car running as low as 9 2-3 miles per gallon, while another ran as high as 32 miles per gallon. Forty per cent. of the number have claimed to get over 20 miles per gallon, while the average of all is a trifle over 18 1-3 miles per gallon. The cost of repairs: This amount ranges from practically nothing in some cases to several hundreds of dollars in others. The total amount of repairs, not including tires for the 161 cars, was \$6,881.29, or an average for each car of \$42.74. For the average length of time the cars have

been used (1 year, 7 months, 20 days), it means an average of \$2.17 per month, or less than 51 cents per week. Another way to compute the cost would be to total the distance traveled, taking 161 cars totalling 1,555,427 miles and with the total cost for repairs \$6,881.29, it means that the cost of the upkeep averages .004939 per mile, or, in other words, only 44 1-4 cents per 100 miles that is traveled. That certainly is cheaper than walking. In considering these points do not overlook the number of passengers carried. Some were runabouts carrying one or two and sometimes three passengers, while others were four-passenger cars carrying five or six passengers. The average as shown by affidavits was nearly 3 1-2 persons, so it would make this expense less than 13 cents per 100 miles for each passenger.

The next item of expense is that of gasoline. The sworn statements show that the miles obtained per gallon run from as few as 9 2-3 up as high as several who got 23 or more, and one as high as 32 miles per gallon. Take the average of the lot, it shows 18.34, or a trifle over 18 1-3 miles per gallon. The cost of gasoline varies in different parts of the country, but may probably be averaged at 18 cents a gallon. It would then make the average one cent per mile per car for fuel, or less than 1-3 of a cent per mile per passenger.

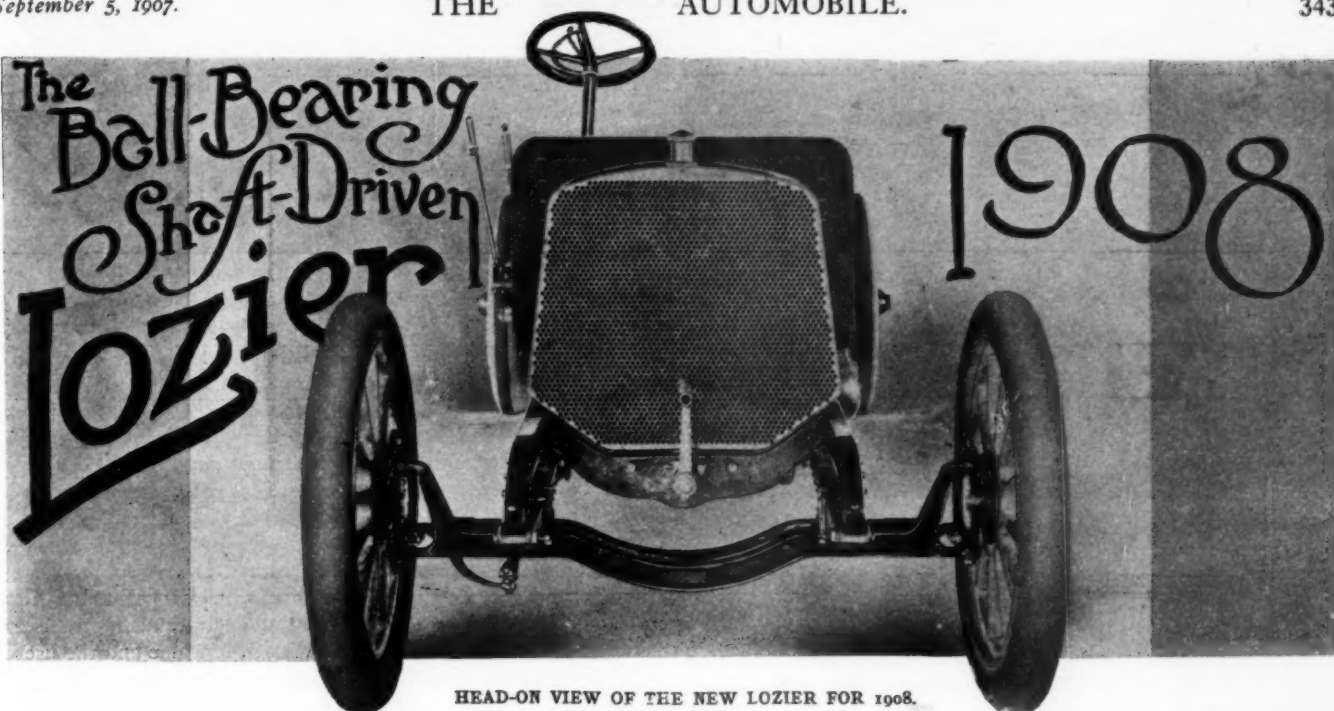
To obtain the amount of expenditures for tires, which in some cases had been included in the repair expenses because many owners do not keep separate expense accounts, 200 dealers throughout the country were asked the following questions:

What is the longest time you have known a set of tires to wear?

What is the greatest number of miles you have known a set of tires to run?

If a customer were to ask you as to about how long or how many miles a set of tires could be expected to last, with proper care, what would you tell him?

The answers to the first question were, in about two years, in some cases less, and in several cases three years, and one answer was four years. To the second question the answers were, all the way from 4,000 to 15,000 miles, but the majority run along from 6,000 to 9,000 miles. Regarding the third question, there was a wide difference of opinion, but they averaged up between one and two years and from 5,000 to 10,000 miles, many replies being qualified by the statement that it would all depend upon the carefulness of the operator and the roads he would have to travel. It certainly is commendatory not only to any one car, but to the whole industry, when, after a careful canvass of over 160 automobile owners, it is authentically estimated that the cost of upkeep of a carefully operated car renders the cost of transportation, per mile, less than any other means of locomotion. The data obtained should dispel popular illusion on this subject.



HEAD-ON VIEW OF THE NEW LOZIER FOR 1908.

"AT certain periods, cumulative experience teaches wherein design and constructive practice may be improved upon, and the year 1908 brings forth, therefore, a Lozier car which is entirely new and different in every detail from its predecessor, the only feature of the car bearing any resemblance to the former models being the cooler. The new car embodies modern and up-to-date features of such a nature that the buyer of one of these cars will probably find little occasion to make any change for several years to come."

So runs the publicity man's foreword announcing the new Lozier for 1908, and a review of the specifications of the car, bearing in mind those of its predecessor, show that the statement that nothing but the radiator is the same is a brief, but true, summing up of the changes made. In no case, however, have the latter been extended into the field of pure experiment or uncertainty, every feature adopted having already undergone the test of time to an extent that entitles it to rank high in the category of the most approved standard practice. The most revolutionary change, from the point of view of the casual observer, consists of the adoption of the shaft drive, though chain-driven cars will still be found in the Lozier line.

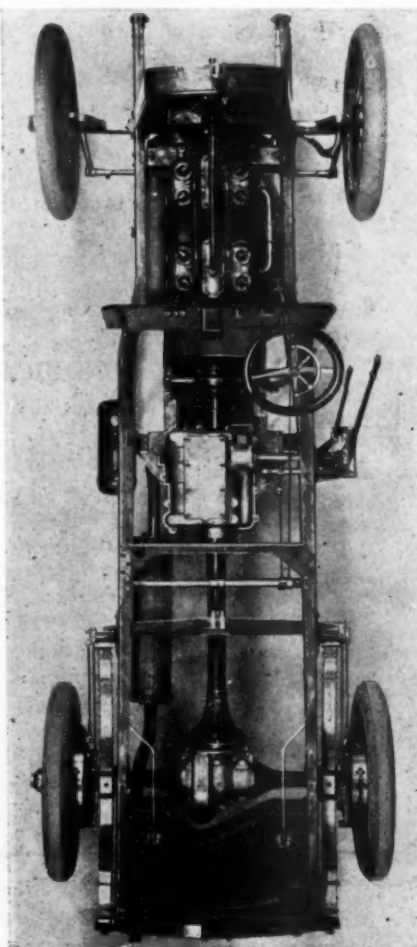
The new car will be officially known as Type H, and to begin with the motor, which fairly bristles with new features, this consists of two two-cylinder units, or twin castings, as previously, and finished in pearl-gray baked enamel. To provide for access to as much of the interior of the motor as possible, without the necessity of dismantling the latter, the cylinder castings have been made with large openings in the heads. These are covered with removable plates to facilitate the inspection of the water jackets, and the lifting of these plates also reveals the presence of two liberal-sized bronze screw plates, the removal of which permits access to the firing chamber of each cylinder. The bore and stroke measure $5\frac{1}{4}$ inches, the

"square" dimensions being best adapted to the high-speed motor. The motor is nominally rated at 45-horsepower, in accordance with the formula recently adopted by the Association of Licensed Automobile Manufacturers, although it will develop 60 actual brake horsepower as compared with the present 40-horsepower rating.

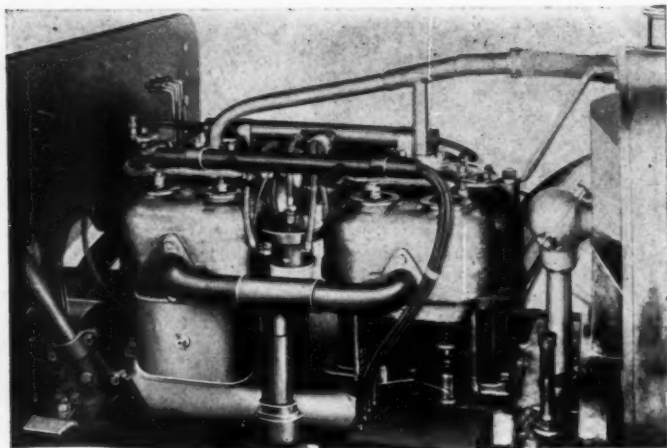
The crankshaft is of unusually liberal dimensions and the same may be said of the annular ball-bearings upon which it is supported, special oil-retaining rings being fitted to each set of bearings.

Lozier practice is adhered to in the valve placing and operation, but the nickel-alloy valves themselves have been enlarged. The one-piece camshafts are also mounted on annular ball-bearings, five to each shaft, and the latter are housed in the engine base so that they be readily withdrawn through the forward end. The valve-lifter housings are held to the sub-base by a yoke, each yoke holding two housings, while each lifter carries springs independent of the valve springs, and the latter, together with the remainder of the valve-operating mechanism, is enclosed by aluminum covers, further reducing the small amount of noise produced as well as protecting them from dirt and giving the outside of the motor an appearance of extreme simplicity and compactness.

The lubricating system is a combination of splash and force feed, and reservoir and oiler being located between the side of the motor and the frame. The oiler is of comparatively small capacity, but is automatically kept replenished from a three-gallon tank on the frame. It is driven by spiral gears direct from the camshaft, while the magneto and pump, located on opposite sides of the motor, are driven by spur gears, the fan being operated by a combination bevel gear and clutch, all these gears being housed and running in oil. The magneto and pump driving shafts are fitted with universal joints, and in the case of the former this takes the form of a notched internal and external gear, providing a simple method



PLAN VIEW OF SHAFT-DRIVEN CHASSIS.

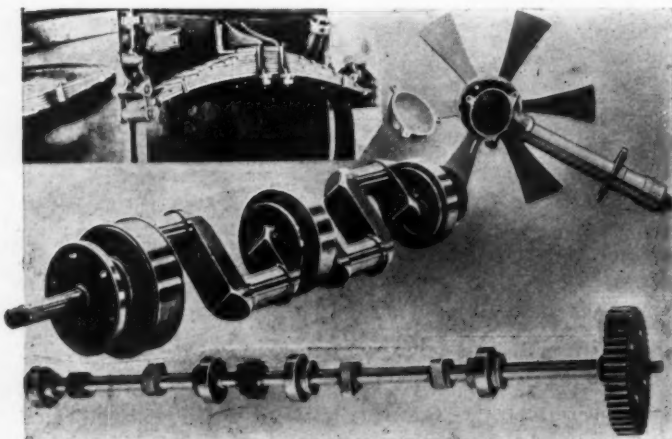


INLET SIDE OF THE 1908 LOZIER MOTOR, SHOWING IGNITION WIRING.

of timing the magneto by remeshing the gears as required; both the shafts in question are ball-bearing.

The ignition system is in duplicate throughout, each side consisting of an entirely independent unit, which may be used separately or in conjunction with the other as desired. The system relied upon for the bulk of the work consists of a Bosch high-tension, ball-bearing magneto connected to a set of plugs screwed into the inlet valve covers, while the standby and starting system consists of a set of 60 ampere hour accumulators supplying current to a single vibrator coil and ball-bearing distributor from which it is led to a set of plugs over the exhaust valves. The distributor is mounted on an aluminum standard located between the two pairs of cylinders and is permanently fixed, thus holding the wiring stationary, the necessary movement for advancing or retarding the spark being obtained by moving the shaft, the timing lever on the steering wheel sector operating on the distributor and magneto simultaneously. The carbureter is of the usual automatic type, controlled by a hydraulic governor operated by the water pump, the pressure at varying speeds acting upon a diaphragm linked to the piston throttle.

The clutch is of the multiple disc type employed on former models, but has been increased in size until it now occupies the entire flywheel diameter, so that the gear-set is placed very close to the motor. The clutch consists of 33 alternate steel and bronze discs, the clutch-pedal being interconnected with the gear-shifting lever; both the clutch-pedal shaft and brake-lever rocker arm are mounted on annular ball-bearings, while the clutch thrust is taken up by a ball-bearing plate. The gear-set provides four speeds forward and reverse, the direct drive being on the third when there are no gears working. Speeds of 12 to 50 miles an hour are attainable on the direct drive, the fourth giving an increase to 60 miles an hour. All the shifting forks are inclosed within

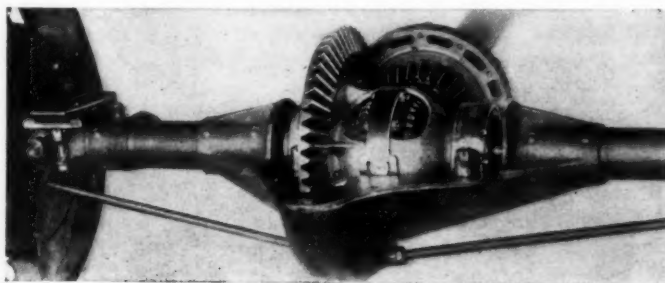


REAR SUSPENSION, CRANKSHAFT, FAN DRIVE AND CAMSHAFT.

the gear case, thus obviating the leakage usual at their points of entrance. Clashing of gears in shifting is prevented by a disc brake on the clutch shaft, while the change-speed lever is also interlocked with the clutch.

All gears and shafts are of specially treated chrome nickel steel mounted on annular ball-bearings, and this material has also been lavishly employed on other parts of the car. This is true of the propeller shaft, which is placed at a very slight angle to the horizontal so that the work of the universal joint is very light. The shaft itself is housed in a nickel-steel tubular casing and the universal at the forward end is also enclosed in dust-proof housing. A floating type of rear axle is employed, the driving shafts being of nickel steel with ample sized differentials of the bevel type, while all pinions are of chrome nickel steel specially hardened and treated. The nickel steel housings of the axle driving shafts are riveted into the cast-steel housing of the bevel drive.

The changes extend to the details of the chassis construction as well, the rear platform spring now being clipped in the center to a large bracket and parallels the cross member of the frame to the rear instead of being placed beneath it as formerly, a change that permits of a longer wheelbase with less overhang than before. Other features of note are the attachment of the 27-gallon gasoline tank to the underside of the frame and the use of a protecting pan of cast aluminum. The steering column has been given slightly more inclination and the dash cleared of everything superfluous, there being but a single vibrator coil,



DRIVING UNIT WITH UPPER HALF OF DIFFERENTIAL CASE REMOVED

switch, pressure gauge and two oil-bleeders in sight. The wheels are 36 inches in diameter and shod with 4-inch tires front and 4 1-2-inch rear. The wheelbase is 124 inches and the weight with a 7-passenger touring body, 3,400 pounds. The general style of the body, which is of the familiar straight-line type, has undergone practically no change.

ECONOMICAL PERFORMANCE OF A TRUCK.

Twenty-five hundred miles under load in three months, with a total of but 11 1-2 hours for stops, is a record that any commercial car might well be proud of, particularly under the adverse road conditions to be found in and around western cities. This is the performance of the Phoenix, three-ton truck built by the Kansas City Motor Car Company. The stoppage mentioned was for the execution of repairs of a most trivial nature, as may be realized from the fact that they consisted of replacing a home-made high-tension magneto with a Bosch machine of the same type, and changing the radiator, which had sprung a leak, the remainder of the 11 1-2 hours being consumed in making brake and carbureter adjustments. As a result of the experience with the radiator, a new form of three-point suspension has been adopted, effectively overcoming any further possibility of recurrence of this trouble.

During the period in question, the average cost of hauling a ton per mile has figured out at \$.09 3-4, this including an outlay of \$250 annually for tire maintenance, \$18 per week for the driver, all gasoline and oil consumed, and ten per cent. on the cost of the vehicle for depreciation, which is a remarkable showing in view of the grades prevailing in and about Kansas City.

STODDARD-DAYTON AGENTS MEET TO DISCUSS.

DAYTON, O., Aug. 31.—A three-day convention which it is expected will develop into an annual affair, has been held at the Dayton Motor Car Company's headquarters. The program, arranged to combine business with pleasure, opened with a visit to the factory, followed by luncheon, an inspection of 1908 models, and an automobile ride. After the entire second day had been spent in discussing business methods, the full body of agents united in a dinner at the Algonquin Hotel, followed by a smoker. The third day was given up to the further inspection of new models and to personal interviews. During the conference Ed. Leinbach, of Baltimore, was presented with a handsome loving cup by the agents as a recognition of the successful manner in which he drove the Stoddard-Dayton runabout in the recent A. A. A. tour.

Those in attendance at the convention were: Messrs. Whitney and Ferris, Boston; J. A. Cramer, Buffalo; J. H. Ratliff, Cincinnati; H. L. Babcock, H. C. Tillotson and Discher, Chicago; O. G. Roberts, Columbus, O.; H. S. Moore, Cleveland; Sears, Des Moines; B. G. Burrington, Holyoke, Mass.; Fisher & Moore, Indianapolis; C. Ettwein, Kansas City, Mo.; H. S. Haynes, Minneapolis; Guy Hartwell, Mobile; Richard Newton and A. H. Whiting, Des Moines; H. B. Tuttle, New Haven; J. W. Mason, Newark, N. J.; J. P. Parker, Memphis; H. M. Smith, Toronto, Canada; E. Estell, Omaha; Hamilton, Philadelphia; G. B. Moore, Pittsburgh; E. L. Nock, Providence; A. M. Zinbrich, Rochester; Geo. Haff, San Antonio; O. V. Reopell, Springfield, Mass.; J. Lucey, Jr., Troy; Geo. Schollenberger, Wichita, Kansas; Schnure, St. Louis; Garvey, New Orleans.

EXTENSIVE ADDITIONS TO RAMBLER PLANT.

KENOSHA, WIS., Sept. 1.—Liberal increases in the facilities of their already large plant have been found necessary by Thomas B. Jeffery & Company, makers of the Rambler automobiles, and the additions are now under way. They consist both of extensions to old buildings and the construction of new ones. These buildings are entirely of concrete with steel and glass roofs of saw-tooth construction, thus assuring light and sanitary conditions as well as protection against fire. The extensions now in course of construction aggregate 50,000 square feet of floor space, which brings the total in the plant to approximately 16 acres. A recent addition to the plant's facilities is the completion of an artesian well, 1,500 feet deep, which has required a year to sink. The natural pressure is sufficient to carry the water to all the buildings, but a pumping plant has been installed for fire protection. As the lighting and heating plants are a part of the factory equipment, this makes the plant entirely independent of outside service.

HEAVY DEMAND FOR SPACE AT GARDEN SHOW.

At a meeting of the show committee of the Association of Licensed Automobile Manufacturers held on Friday last, it developed that there has been an increase of 25 per cent. in the number of applications for space at the eighth annual show to be held in the Garden, November 2-9. There were over 250 exhibitors last year, while up to date 300 applications have been received, for which allotments have already been made. A feature of the show will be the motor-cycle section in which 31 manufacturers have secured space. The rules regarding the display of advertising matter will be the same as in previous years and the uniform decorative scheme will include the motor-cycle section. Colonel George Pope, Charles Clifton, Marcus I. Brock and M. L. Downs, secretary, were present at the meeting.

Export returns for the month of July, 1907, show an increase to \$796,325 from \$513,179 for the corresponding month last year, this total covering the value of 345 complete cars and \$68,934 worth of parts. For the seven months ending July, 1907, the total is \$4,245,490, representing the value of 2,052 cars.



MORRIS PARK TRACK'S EXCELLENT CONDITION IS SELF-EVIDENT.

ARRANGEMENTS FOR MORRIS PARK RACES.

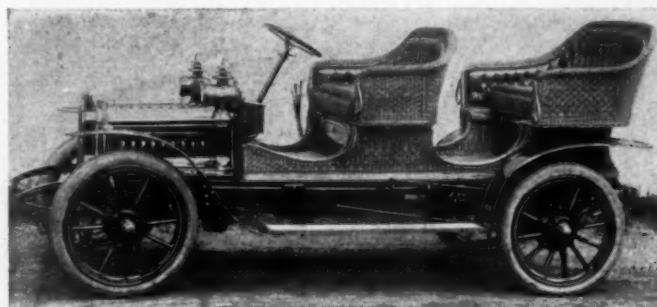
Eighteen thousand gallons of oil have been used in putting the Morris Park track in shape for the 24-hour and other races scheduled for September 9-10, and the course will be brilliantly illuminated at night. The Morris Park Motordrome Club has guaranteed the payment of the \$1,000 purse for the 24-hour race by offering to deposit a certified check for the amount with the A. A. A., and a number of entries from prominent makers is expected. One of the entries made Tuesday in the short-distance events was E. Russell Thomas's 120-horsepower Hotchkiss, driven in last year's Vanderbilt Cup race by E. Fitz Shepard. It will be driven by Wally Owen in the record trials.

DRAGON AUTOMOBILE COMPANY REORGANIZES

PHILADELPHIA, Sept. 3.—While there has been no radical change in the interests involved in the Dragon Automobile Company, the latter has recently been reorganized with John Kane Mills again at its head. It will be recalled that he retired several months ago on account of ill-health. The new list of officers is as follows: President, John Kane Mills; vice-president and treasurer, Henry Rawle; second vice-president and sales manager, A. L. Kull; general manager, J. H. O'Brien. The directors are J. F. Grimes, Pittsburg; Francis Rawle, Philadelphia; John Kane Mills, New York; Henry Rawle, Philadelphia; A. L. Kull, New York.

NOVEL LIGHT-WEIGHT BODIES OF RATTAN.

Suitable materials for the building of automobile bodies are not as numerous as might appear at first sight, so that the choice of rattan for this purpose carries with it many advantages. Chief among these naturally is lightness, it being claimed by the makers of the novel body shown in the accompanying illustration, the Amesbury Reed & Rattan Company, Amesbury, Mass., that it weighs one-third less than a similar construction of wood. The rattan is rubber lined, making it dust and water-proof, while the leather upholstery is all kept in place by patent fasteners, thus rendering it easily removable for washing. These bodies are made in runabout styles also, and are designed to fit any type or make of chassis.



NEW WATERPROOF AND DUSTPROOF RATTAN AUTO BODY

BRIEF ITEMS OF NEWS AND TRADE MISCELLANY

The Shoemaker Automobile Co., of Freeport, Ill., is considering a flattering offer from Elkhart, Ind., to locate its manufacturing plant in that city.

The collection department of the New York Automobile Trade Association which was recently established, is proving a very successful feature. The association now has a membership of 61 local dealers and garage owners, making it the largest association of its kind in existence.

According to the Electric Vehicle Co., of Hartford, Conn., the season of 1908 will be a good one for electric. The present season has marked an increased use of this type of vehicle, and many light electric victoria phaetons have been sold, most of them to women.

Three more concerns have been admitted to membership in the American Motor Car Manufacturers' Association, bringing the total up to 49. The new members are the Reliance Motor Truck Company, Detroit; Gaeth Automobile Works, Cleveland, and the Imperial Motor Car Company, Williamsport, Pa.

In the recent Coupe de la Presse race in France the Continental Caoutchouc Tire Company had the honor of fitting the winning car with Continental tires that covered the entire distance of 400 kilometers without changing. The tires were reported to be in excellent condition at the finish.

The new Rainier factory at Saginaw, Mich., is now in full operation, turning out the 1908 product under the supervision of James G. Heaslet, who has designed the Rainier cars for the past three years. Ezra E. Kirk, general western sales manager for the company, left Saginaw, September 2, for the Pacific coast on an extended trip for the purpose of placing agencies.

One exhibitor that will be distinctly missed from all the New York shows this year is the American Locomotive Automobile Company. This company maintains a neutral attitude and is not a member of either of the rival manufacturers' associations. For this reason it could not obtain preferred space, and therefore it decided last week not to be a part of any show, but to hold a two-week show of Berliet cars independently in the reception of the Waldorf-Astoria near the Thirty-third street entrance, from October 24 to November 9.

NEW AGENCIES ESTABLISHED.

The Maxwell-Briscoe Motor Company has established new branch houses at Dallas, Tex.; Pittsburgh, Pa.; Atlanta, Ga., and Kansas City, Mo. The company expects to have 15 branch houses throughout the country by the time its 1908 selling force is thoroughly organized.

President P. C. Avery, of the Avery Portable Lighting Company, of Milwaukee, Wis., while in New York last week opened a metropolitan distributing house at 51 West Sixty-third street, adjacent to Broadway. A full stock of recharged tanks of all makes will be carried. The new branch will supply agents in the Eastern States and will be in charge of A. W. Kaestner, who has been connected with the factory at Albany, N. Y., for some time.

The J. W. Bowman Company has been appointed Boston selling agent for the

Stevens-Duryea for 1908, succeeding the estate of the late F. E. Randall, who handled the agency successfully in Boston for a number of years. Permanent warerooms will be opened in a few days at 911 Boylston street, and a repair department has been established at 57-61 Stanhope street. Mr. Bowman, the head of the new concern, was formerly New York manager for the Fisk tire branch.

RECENT TRADE CHANGES.

On September 1 the Butler Auto Supply Company succeeded the Angier Auto Supply Company, 222 Park Square Motor Mart, Boston. H. M. Butler, president of the company, having purchased the interest of O. M. Angier, the former treasurer. The new company will continue to carry complete lines of auto supplies for which it is the agent.

Owing to the demand for Continental and Firestone tires, for which they are the Philadelphia agents, James L. Gibney & Brother have found it necessary to remove the offices to the second floor of their establishment, devoting the entire first floor to selling purposes, which will give them one of the finest salesrooms on Broad street.

PERSONAL TRADE MENTION.

A. A. Kelsey, of Washington, of the Good Roads Bureau, Department of Agriculture, is now on a month's tour through Pennsylvania and New York in his Franklin.

Tony Nichols, chief demonstrator of the Boyer Motor Car Company, San Francisco, Cal., recently made a trip through the East of several weeks' duration, and visited the plants of the H. H. Franklin Mfg. Co., of Syracuse, N. Y.

Percy Owen, president of the New York Automobile Trade Association and United States importer of the Bianchi car, will return this week from Maine, where he has been enjoying a well deserved vacation.

G. N. Bliss has been appointed manager of the Chicago branch of Thos. B. Jeffery & Co., to succeed Joseph Gunther. Mr. Bliss comes from the Rambler factory, at Kenosha, Wis., where he has been located for some time past.

Fred P. Brandt, formerly sales manager of the Autocar Company, has been made vice-president and general manager of the Imperial Motor Car Company, of Williamsport, Pa., the new automobile manufacturing enterprise in which State Senator Cochran, of that city, is interested.

Harold J. Ellsworth, formerly connected with the sales department of the Maxwell-Briscoe Motor Company, has been appointed general sales manager of the Colt Runabout Company, of Yonkers, N. Y., and C. B. Kraske has been appointed purchasing agent for the same concern.

R. G. Howell has resigned as manager of the Franklin department of Wyckoff, Church & Partridge, New York City, and will establish an exclusive agency in New York for an old-established manufacturing house. Mr. Howell expects to announce his plans about the middle of the month.

G. G. Luthy, secretary of the Bartholomew Company, Peoria, Ill., makers of Glide automobiles, has started for an extended

trip through the West. He will visit Denver, Salt Lake City, Butte, Spokane, Seattle, Tacoma, Portland, San Francisco, and Los Angeles, calling on established agencies and placing new ones.

E. A. Crosser, for the past two years with the Haynes Automobile Company, Minneapolis, Minn., has severed his connection with that house, returning to the employ of the White Company, with which he was formerly connected. He will look after the White interests in the Texas territory.

Robert J. Firestone, sales manager of the Firestone Tire & Rubber Company, will leave September 9 on a month's trip to Mexico and the Pacific Coast points. While in the City of Mexico he will establish a Firestone branch house there, and afterwards proceed on a tour of inspection of the Pacific Coast agencies. John D. Hodgkins, for several years manager of the St. Louis Firestone branch, will hereafter represent the company at Atlanta, Ga. O. O. Petty has been appointed to his former position as manager of the St. Louis office.

George W. Bennett, formerly identified with the Rambler interests and more recently general manager of the Knox Automobile Company, has accepted the appointment of manager of the metropolitan branch of the White Company, of Cleveland, with headquarters at Broadway and Sixty-second street, New York City, to take effect October 1, succeeding Carl H. Page, resigned. Mr. Bennett was for many years identified with Thomas B. Jeffery & Company, in fact since the period of extensive bicycle manufacture, and the Knox people were desirous of retaining his services for their reorganization. He, however, preferred to return to New York City, where he had made his early success. His predecessor, Mr. Page, who has successfully conducted the White branch for several years, has not yet announced his plans.

AJAX-GRIEB CO. MEETING.

Final approval of the plans for the new factory buildings of the Ajax-Grieb Rubber Company was given by the stockholders at the annual meeting of the company in Trenton, N. J., on Tuesday of this week. The plans call for three buildings of brick, with a total floor space of 75,000 square feet on the west side of Olden street in Trenton, where about six acres of ground is owned by the corporation. The present factory is located on the east side of the street.

New officers for the ensuing year were elected, viz: President, Horace DeLisser; vice-president, Wm. G. Grieb; secretary and treasurer, Harry Grieb. Satisfactory dividends were declared on both the preferred and common stocks.

For the 1908 automobile tires the company has decided to devote its plant almost exclusively to those of the wrapped tread type in all sizes, and will be in fine shape to meet the increasing demands of its business when the new plant is completed. Thousands of this make of tires are used as regular equipment on Ford runabouts, Maxwells, Mitchells, and other well-known cars.

To-day (Thursday) President DeLisser will leave for a trip to the coast, his schedule calling for visits to agencies in seventeen different cities en route.